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ABSTRACT

The document provides lesson plans for strengthening the thought processes, including problem solving and creative abilities, of fifth and sixth grade mentally gifted children. The lessons are organized within the five operations of the mind as defined by J. Guilford's Structure of Intellect (SOI): cognition (16 lessons), memory (7 lessons), divergent production (34 lessons), convergent production (4 lessons), and evaluation (3 lessons). All six products of the SOI model (units, classes, relations, systems, transformations, and implications) are considered; however, emphasis is placed on transformations and implications since these two products are seen to clearly relate to the creative process. Diagrammed for lessons in each of the five operations areas are the curricular objective (such as that the student will demonstrate an understanding of optical illusions by constructing one or more of his own), input (such as discussion to determine how surroundings influence one's perception), learning opportunities, media, output, evaluation, and enrichment. Included in the document are mazes, pictures, puzzles, and other worksheets to be duplicated and used with the lessons. (SBH)

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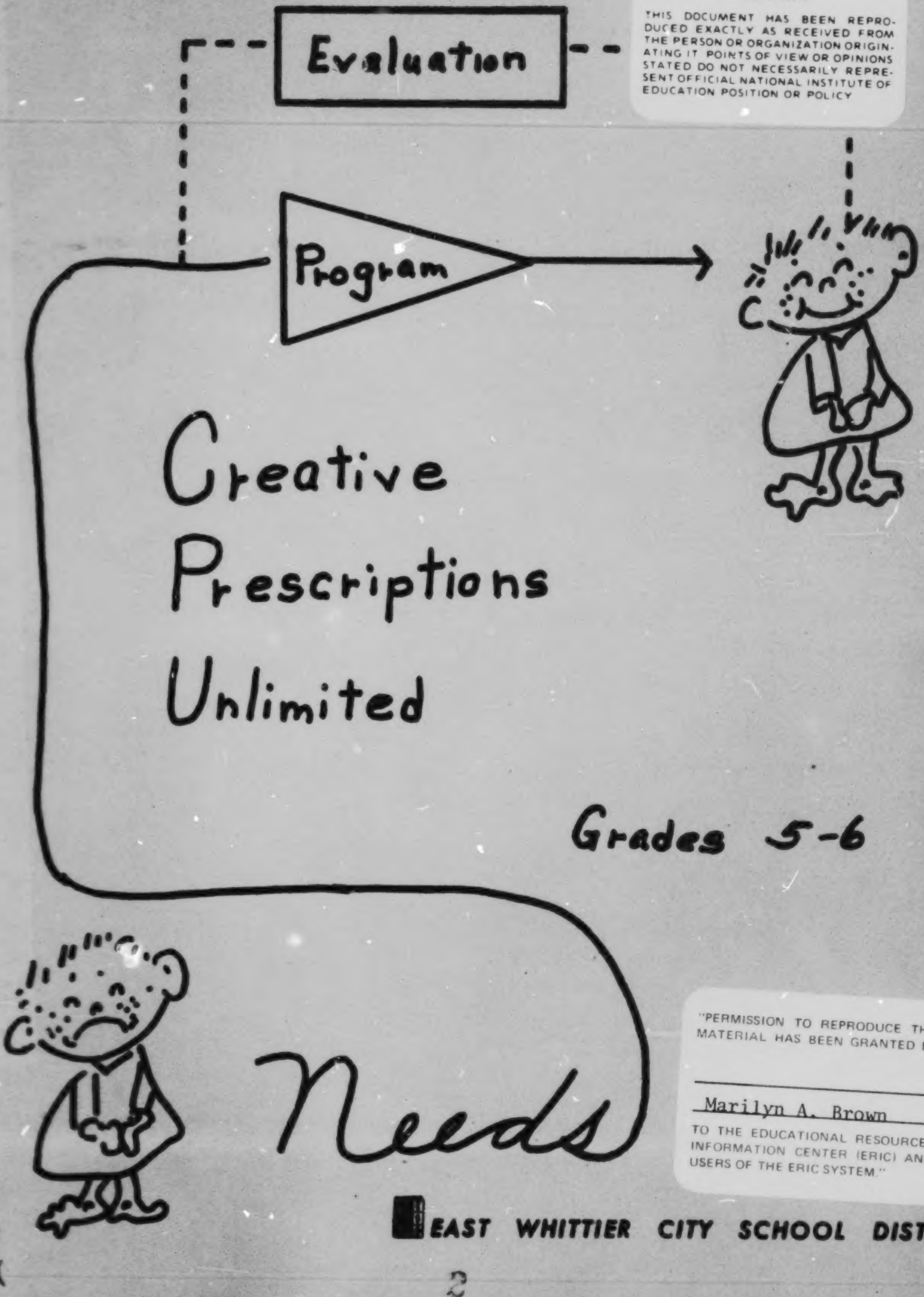

Creative
Prescriptions
Unlimited

Grades 5-6

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EAST WHITTIER CITY SCHOOL DISTRICT

The learner is an active agent who organizes the world by labeling and grouping, noting, and establishing relationships, and by hypothesizing and predicting. Thus the pupil creates his own world and is not totally dependent upon his world to shape and mold him. Yet, in order to create the kind of environment conducive to learning and mental health, certain conditions are necessary. Those conditions which give rise to productive learning are qualitatively and quantitatively rich experiences; human support and responsiveness to others; and, opportunities for the learner to mediate those experiences through conversation. The school may, and perhaps even must, provide all three of these conditions in order to make possible change in one's cognitive field and in one's behavior.

- Marie Hughes

East Whittier City School District

ACKNOWLEDGMENTS

We wish to express sincere appreciation to all those who gave so generously of their time and effort in the preparation and implementation of this creative problem-solving program based on the Structure of Intellect model.

Special thanks goes to the four resource teachers who developed the curriculum for the program:

Janice Allen
Marilyn Brown
Helen Clements
Ardith Johnson

and to the secretaries, Deede Boyer and Selma Bergen, who made rough copy look beautiful.

Much gratitude goes to the hardworking publications staff for their effort and interest in producing this project.

Sincere appreciation goes to the library staff for their help in cataloging and distributing materials.

We wish also to thank the publishers of commercial materials from which we have drawn in developing these lessons. A bibliography of valuable sources appears in the back of this guide.

We are deeply grateful to Bob Fraser, principal of Mar Vista School, and to his staff. Their support and assistance in the initial implementation of the program was outstanding. We wish also to thank the many parent volunteers at Mar Vista School for a very valuable contribution.

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Dr. Mary N. Meeker
Director of Training
for Psychologists and Psychometrists
Loyola University
Los Angeles, California

Dr. Ralph Hoepfner
Director
Educational Evaluation Association
UCLA
Los Angeles, California

and Dr. J.P. Guilford whose valuable research is the basis for this program.

Special appreciation is expressed to Ron Salo, Coordinator of Educational Support Services, for his constant encouragement and support.

And a very special thank you to the boys and girls in the District who have worked with the lessons and have practiced creative problem solving skills.

And, finally our sincere thanks is extended to the members of the Board of Education of the East Whittier City School District who made this project, "Developing Divergent Modes of Thinking" possible.

Keith B. Walton

Keith B. Walton, Superintendent

Eleanor M. Manning

Eleanor M. Manning, Director
ESEA Title III
Developing Divergent Modes of Thinking

FOREWARD

Creative Prescriptions Unlimited (CPU) has been designed in an effort to help teachers find new ways to strengthen the thought processes of boys and girls and to develop more effective modes for solving problems.

The common thread of education is the development of the ability to think. The values and skills of thinking do not accrue automatically; do not develop by themselves. The natural capacities possessed by everyone need training and development.

As we worked with our boys and girls we felt that they were not using their fine minds as proficiently as they might. We wanted to develop activities that would cause them to use the higher thought processes. Programs for educating the gifted should include training in independent thinking. A program that merely calls for the dutiful collection of facts will not achieve this goal. We wanted to find ways to help students learn to consider all sides of a question; to keep their minds open as they considered many alternative solutions, and then evaluate those solutions in the cold light of reason; to become reflective rather than impulsive in considering problems. These ideas form the nucleus for this guide.

Creative Prescriptions Unlimited is a product of an ESEA, Title III project, Developing Divergent Modes of Thinking in Mentally Gifted Children. The project was in progress in the East Whittier City School District from October 1, 1971, to June 30, 1974.

The research of Dr. J.P. Guilford and his Structure of Intellect (SOI) model have been used as the basis for this project. (See Table 1.) Dr. Mary Meeker's interpretation of this research and her design for its practical application in the classroom has been heavily relied upon.

In the project we have hypothesized that, through providing educational activities designed to strengthen the thought processes, we can help boys and girls think more effectively. The results obtained through the administration of the Torrance Tests of Creative Thinking appear to bear this out.

The lessons in this guide are organized within the five operations of the mind as defined in the SOI. These operations are: cognition, memory, evaluation, convergent production, and divergent production. Figural, symbolic, and semantic content have been used. Behavioral content is not a part of this guide. All six products: units, classes, relations, systems, transformations, and implications have been considered. However, there is an emphasis on transformations and implications, since these two products are clearly related to the creative process.

Divergent production has received the greatest emphasis in the guide. This operation is an important part of the creative process. Divergent production encompasses:

Fluency - the ability to generate a ready flow of ideas

Flexibility - the ability to use many different approaches or strategies in solving a problem; the willingness to change direction and modify given information.

Originality - the ability to produce clever, unique, and unusual responses.

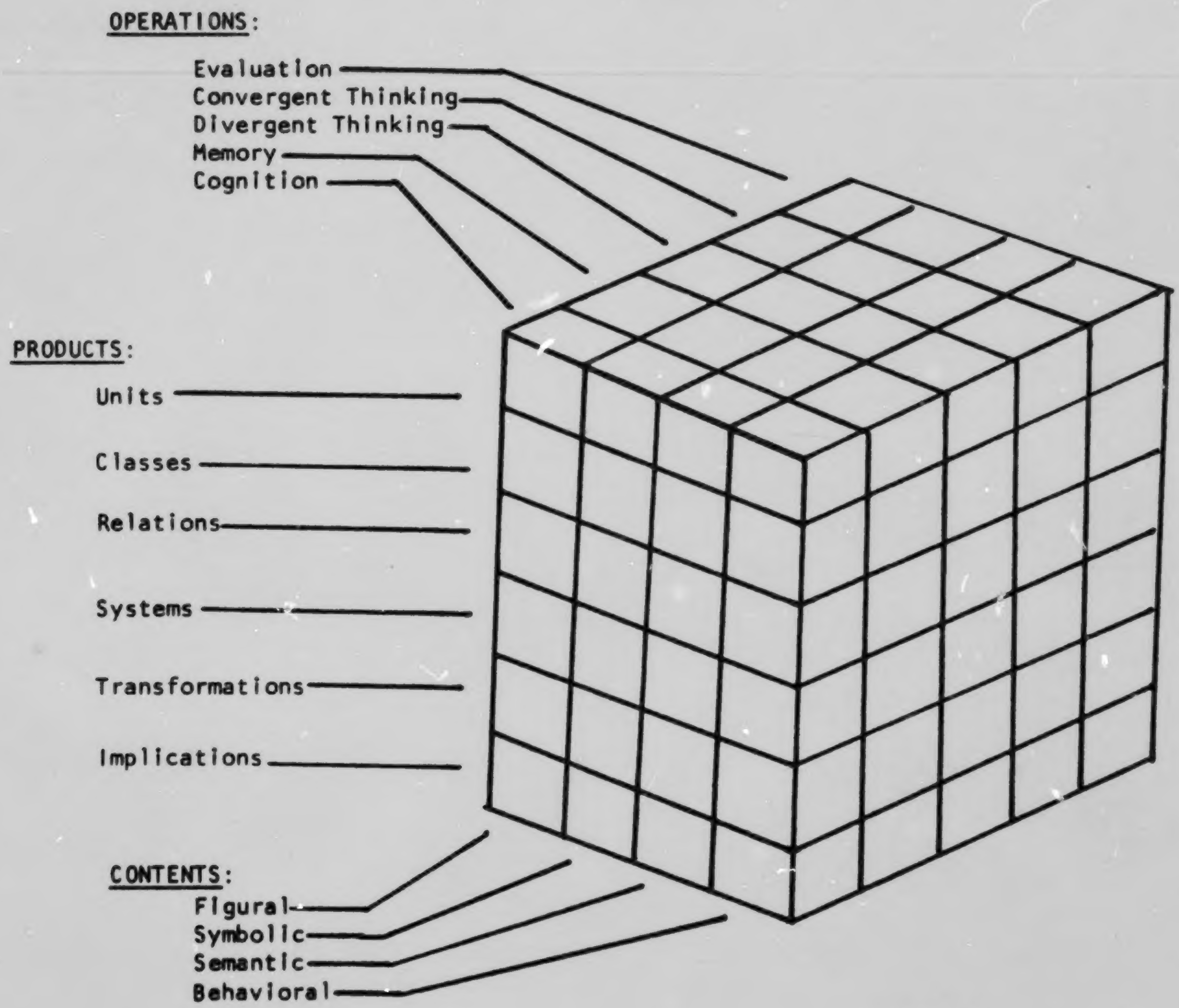
Elaboration - the ability to expand, develop and embellish one's ideas.

The divergent production section of this guide is broken down into the above four components.

Creative problem solving lessons are stressed. The creative problem solving process includes all of the five operations of the mind. (See Table 2.) It is our hope that through gaining an understanding of this process and applying it in problem solving situations, our boys and girls will be better able to function in an ever changing society.

TABLE 1

STRUCTURE OF INTELLECT


OPERATIONS:
Evaluation
Convergent Thinking
Divergent Thinking
Memory
Cognition
PRODUCTS:
Units
Classes
Relations
Systems
Transformations
Implications
CONTENTS:
Figural
Symbolic
Semantic
Behavioral

THE CREATIVE PROCESS

Stages of Creative Process	Expected Form	Predominant Thinking Operation	Personality Factor or Attitude Required
desire preparation	neat well-organized well-stated	cognition memory	curiosity complexity studiousness sustained attention
manipulation incubation intimation illumination	sloppy often confused incoherent	divergent thinking	imagination intellectual freedom risk taking tolerance of failure and ambiguity
verification	neat well-organized clearly stated	convergent thinking evaluative thinking	intellectual discipline following logical sequence

TABLE 2

DEFINITIONS OF FACTORS COMPOSING THE STRUCTURE OF INTELLECT

MAJOR PROCESSES

Intellectual operations which the mind does with the raw materials of information.

C	COGNITION:	Discovery, awareness, rediscovery, or recognition of information in various forms; comprehension; understanding.
M	MEMORY:	Retention of information in any form.
N	CONVERGENT PRODUCTION:	Generation of information from given information, where emphasis is upon reproducing conventionally accepted best answers or outcomes.
D	DIVERGENT PRODUCTION:	Generation of information from given information, where the emphasis is upon the variety and quality of answers. This operation is closely related to the creative process.
E	EVALUATION:	Reaching decisions or making judgments concerning the correctness, suitability, adequacy, desirability of information, in terms of identity, consistency, and goal satisfaction.

CONTENTS

General varieties of information.

F	FIGURAL CONTENT:	Information in a concrete form, visually, auditorially, or kinesthetically.
S	SYMBOLIC CONTENT:	Information in the form of signs, having no significance in and of themselves, such as letters, numerals, musical notes.
M	SEMANTIC CONTENT:	Information in the form of meanings to which words commonly become attached; most notable in verbal thinking.
B	BEHAVIORAL CONTENT:	Information essentially non-verbal, involved in human interactions, where awareness of attitudes, need, desires, intentions, thought, etc. of other processes is important. (Behavioral content is not a part of this project.)

PRODUCTS

Results obtained from the intellect's processing of information.

U	UNITS:	Segregated items of information having "thing" quality.
C	CLASSES:	Items of information grouped by common properties.
R	RELATIONS:	Recognized connections between units of information based upon variables that apply to them.
S	SYSTEMS:	Organized items of information; complexes of interrelated or interacting parts.
T	TRANSFORMATIONS:	Changes in existing or known information, or in its use; requiring the redefinition or modification of information.
I	IMPLICATIONS:	Extrapolations of information in the form of expectancies, predictions, and consequences.

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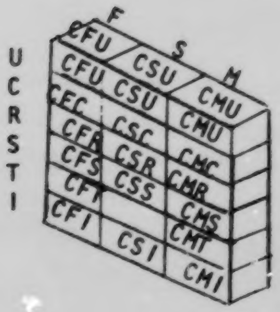


Concept Cognition

Curricular Objective

1.1 Given a series of optical illusions the student will demonstrate his knowledge by discussing the function of his mind and eyes in creating an illusion.

Input

Through discussion determine what an optical illusion is.

Find the meaning of the words "optical" and "illusions."

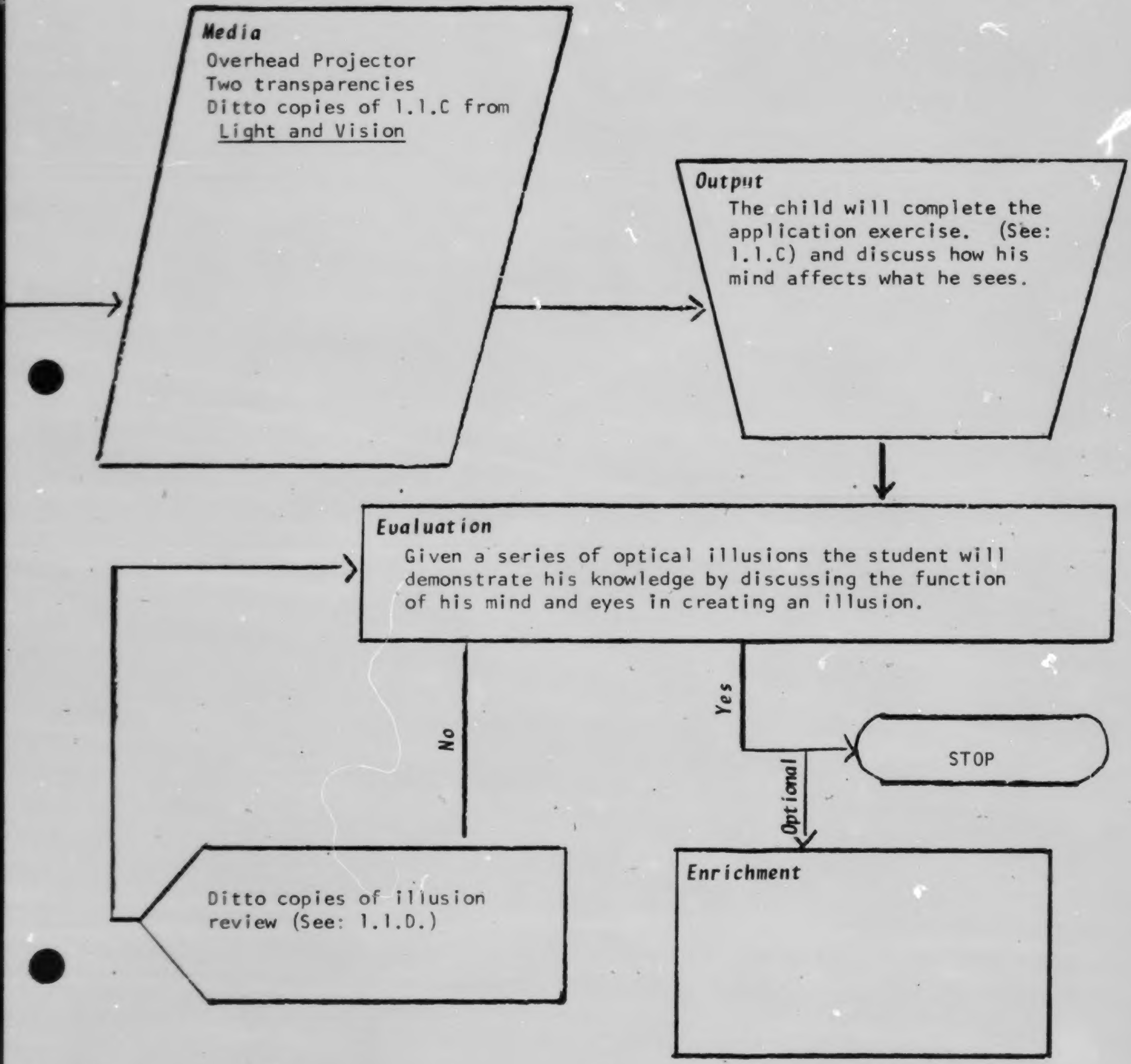
Learning Opportunities

I. Project the "Cues That Confuse" transparency. (See: 1.1.A)
   A. Ask the children to describe what they see.
   B. After looking more carefully ask the children what happens to the picture.

II. Project the optical illusions transparency. (See: 1.1.B)
   A. Show each illusion separately.
   B. Discuss what happens to each object.
   C. Ask the children to formulate theories as to why these objects seem to change.
   D. Let children research optical illusions and report on how they work. (See also: 1.1.A, right-hand text.)

III. Discuss the word "perception" and how it affects your view of the world.

IV. Distribute ditto copies of 1.1.C for students to work.



Media

Overhead Projector
Two transparencies
Ditto copies of 1.1.C from
Light and Vision

Output

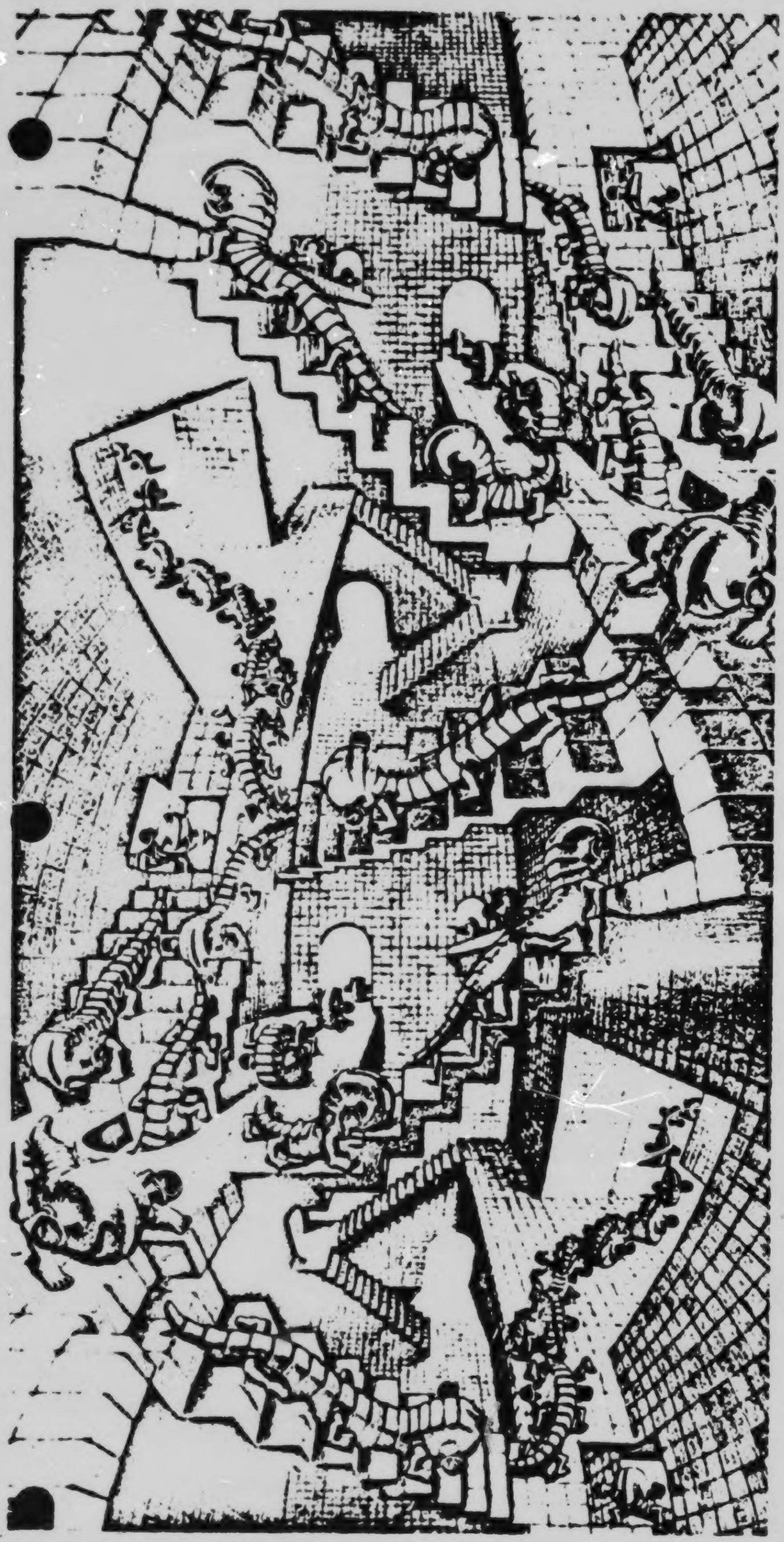
The child will complete the application exercise. (See: 1.1.C) and discuss how his mind affects what he sees.

Evaluation

Given a series of optical illusions the student will demonstrate his knowledge by discussing the function of his mind and eyes in creating an illusion.

Ditto copies of illusion review (See: 1.1.D.)

Enrichment



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The House of Stairs by M.C. Escher

1.1.A.

CUES THAT CONFUSE

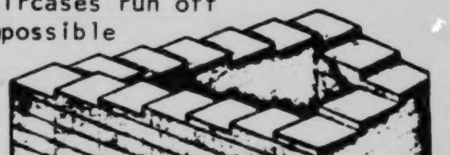
Human vision is a highly adaptable system. The brain routinely processes data from the eyes, relying on visual cues to perceive an acceptable, if not always accurate picture of the world. But occasionally the system breaks down. For there are sights, like the one at the left, that are simply beyond comprehension. Here, an imaginative artist has planted so many conflicting cues to perspective, distance and direction, that it is impossible to tell up from down.

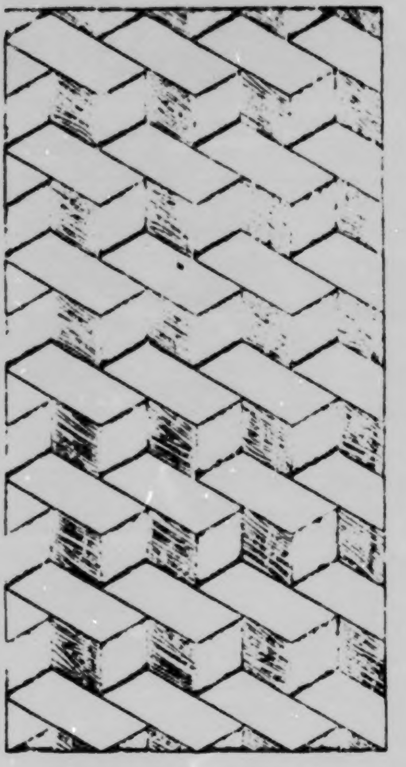
Visual impossibilities, unknown in direct vision, can be created on paper in such a way that at first glance they appear logical. But as they are examined more carefully, the cues create confusion. The staircase below neither rises nor descends; the three-pronged bolt and its bracket and nuts (opposite) are all inconceivable. The brain struggles briefly to make sense of them, but eventually accepts them for the illusions that they are.

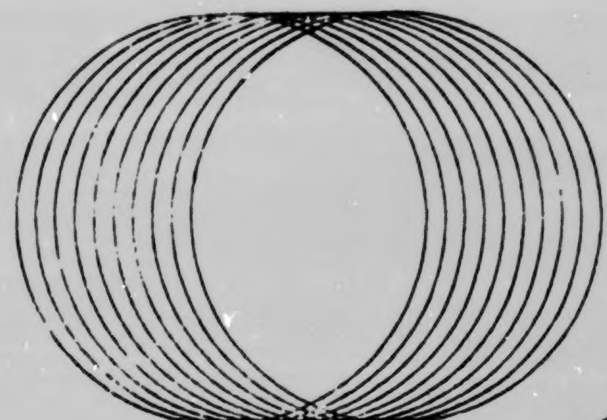
When given conflicting but equally acceptable cues, however, the visual system interprets them impartially. The wire coil, stacked blocks and fish pattern (opposite) all can be viewed from two directions, and the brain alternates from one view to the other.

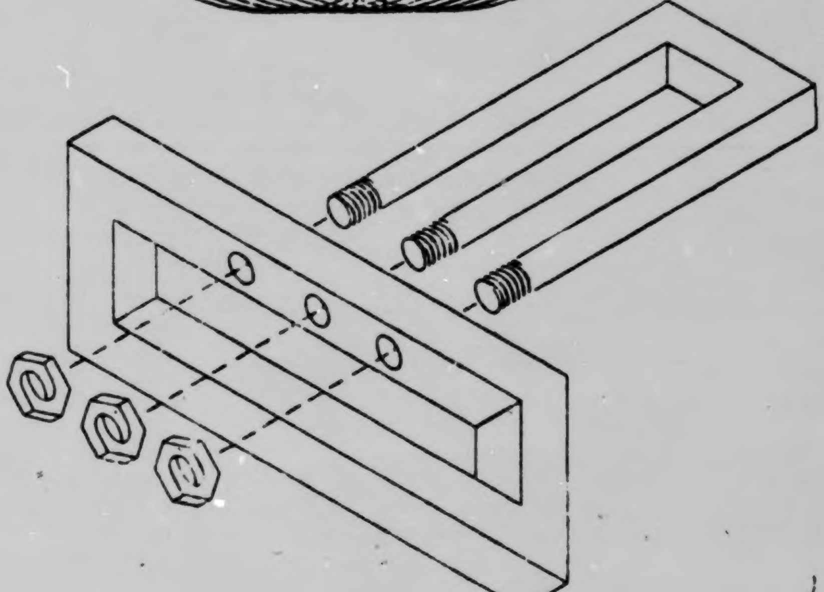
STAIRCASE TO NOWHERE

In the surrealistic drawing at left, staircases run off at all impossible angles and directions because the artist has deliberately distorted the visual cues. While it is possible to draw such a scene - even make parts of it tantalizingly logical - it is impossible for it to exist in three dimensions. The same can be said for the simpler but equally impossible figure above. It is inconceivable that a staircase should end where it begins, no matter which direction is followed.



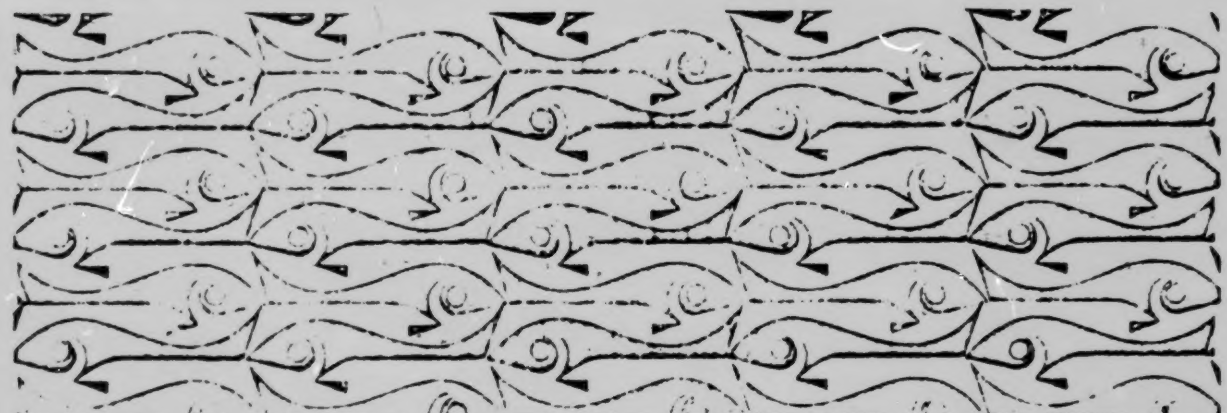




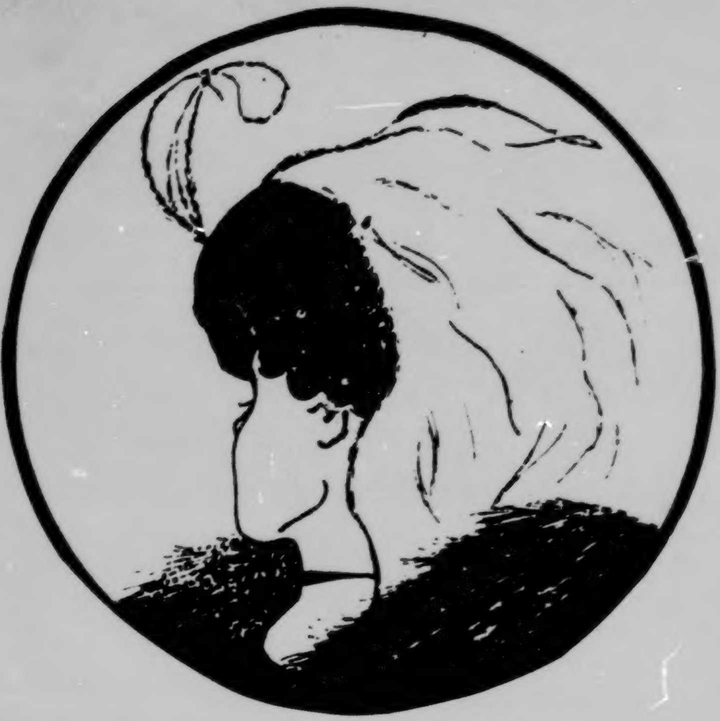


PLAYING TRICKS ON THE EYE

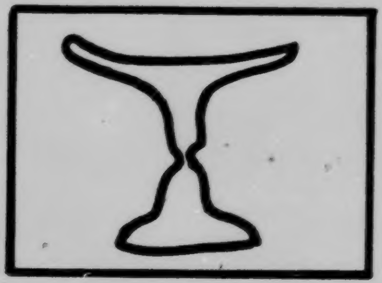
Confusing cues are sometimes rationalized. The stack of blocks above can be perceived with the white sides at either the top or bottom, a phenomenon called reversible perspective. The phenomenon also makes the coil *(top right)* seem to change position. The fish in the pattern below appear to swim now in one direction, then the other. But the fork, bracket and nuts *(right)* are rejected by the brain as impossible figures.



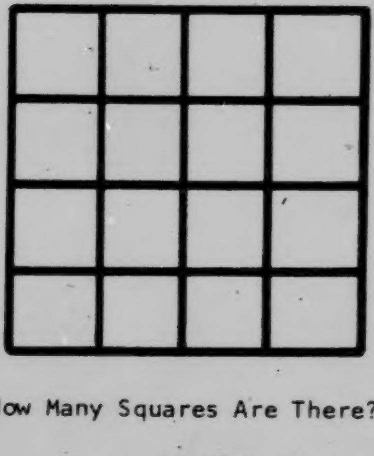
From Aviation Sky Writers, Feb. 1966
Rockwell International taken from Light and Vision, Time-Life Books



What Kinds of People Do You See?



What Images Do You See?



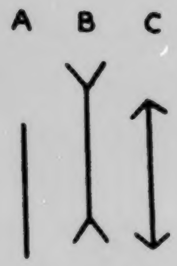
How Many Squares Are There?

1.1.D.

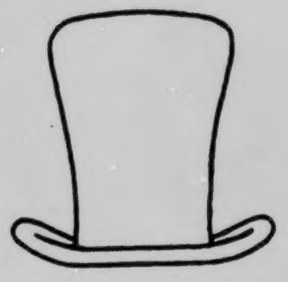
CAN YOU TRUST YOUR EYES?*

The following optical illusions give you a good opportunity to test your visual judgment. You're in for a few surprises!

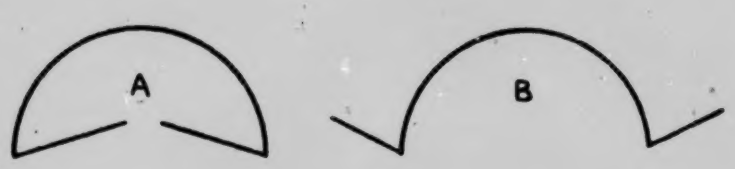
A score of 7 is good; 8 is better; 9 is wonderful; and 10, undoubtedly, is just perfect!



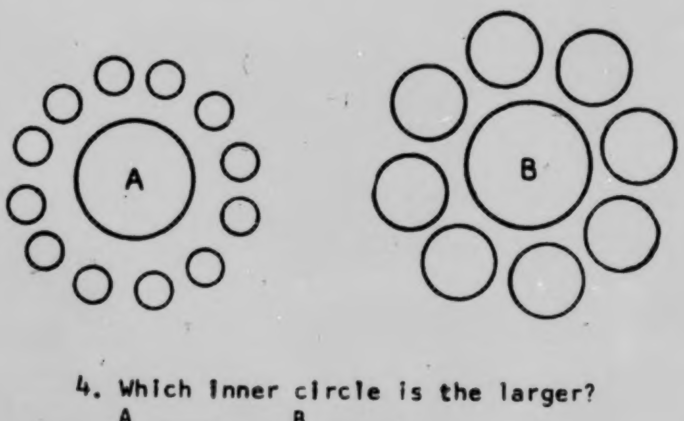
1. Which of these lines is the longest?
A _____ B _____ C _____



2. Is this hat higher than it is wide?
Yes _____ No _____



3. Which semi-circle is the larger?
A _____ B _____



4. Which inner circle is the larger?
A _____ B _____

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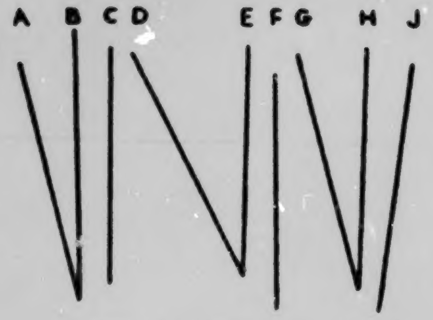
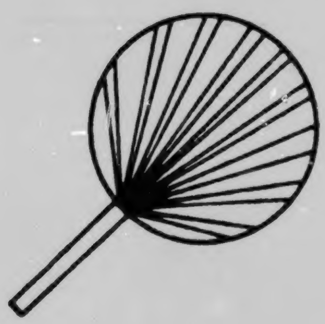
* From Grab a Pencil by Harold H. Hart c. 1958 Hart Publishing Co. Inc.



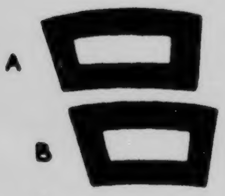
5. Which is the longest line?

A________ B________ C________
D________ E________ F________
G________ H________ J________



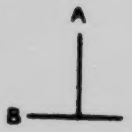
6. Does the fan form a perfect circle?

Yes________ No________



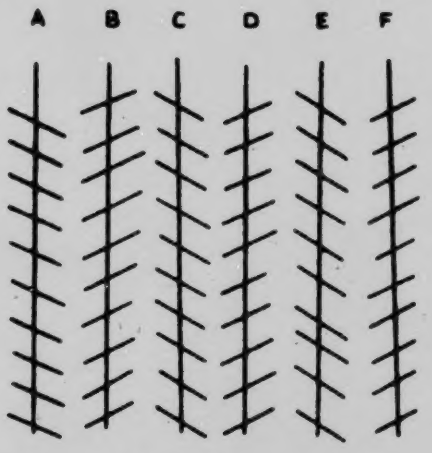
7. Which is larger?

A________ B________



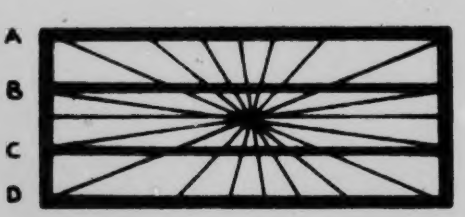
8. Which is longer?

A________ B________



9. Which of these lines are parallel?

A________
B________
C________
D________
E________
F________



10. Which lines are parallel?

A________
B________
C________
D________

ANSWER SHEET

1.1.C - 1. Old lady and young lady

2. A candy dish (or vase) and two faces

3. 30 squares

1.1.D - 1. C

2. No

3. A

4. B

5. B

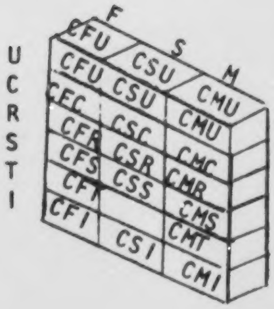
6. Yes

7. A

8. B

9. A, B, D, E

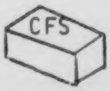
10. All



Concept Cognition

Curricular Objective

1.2 The student will demonstrate an understanding of optical illusions by constructing one or more of his own.



Input

Through discussion determine how surroundings influence one's perception.

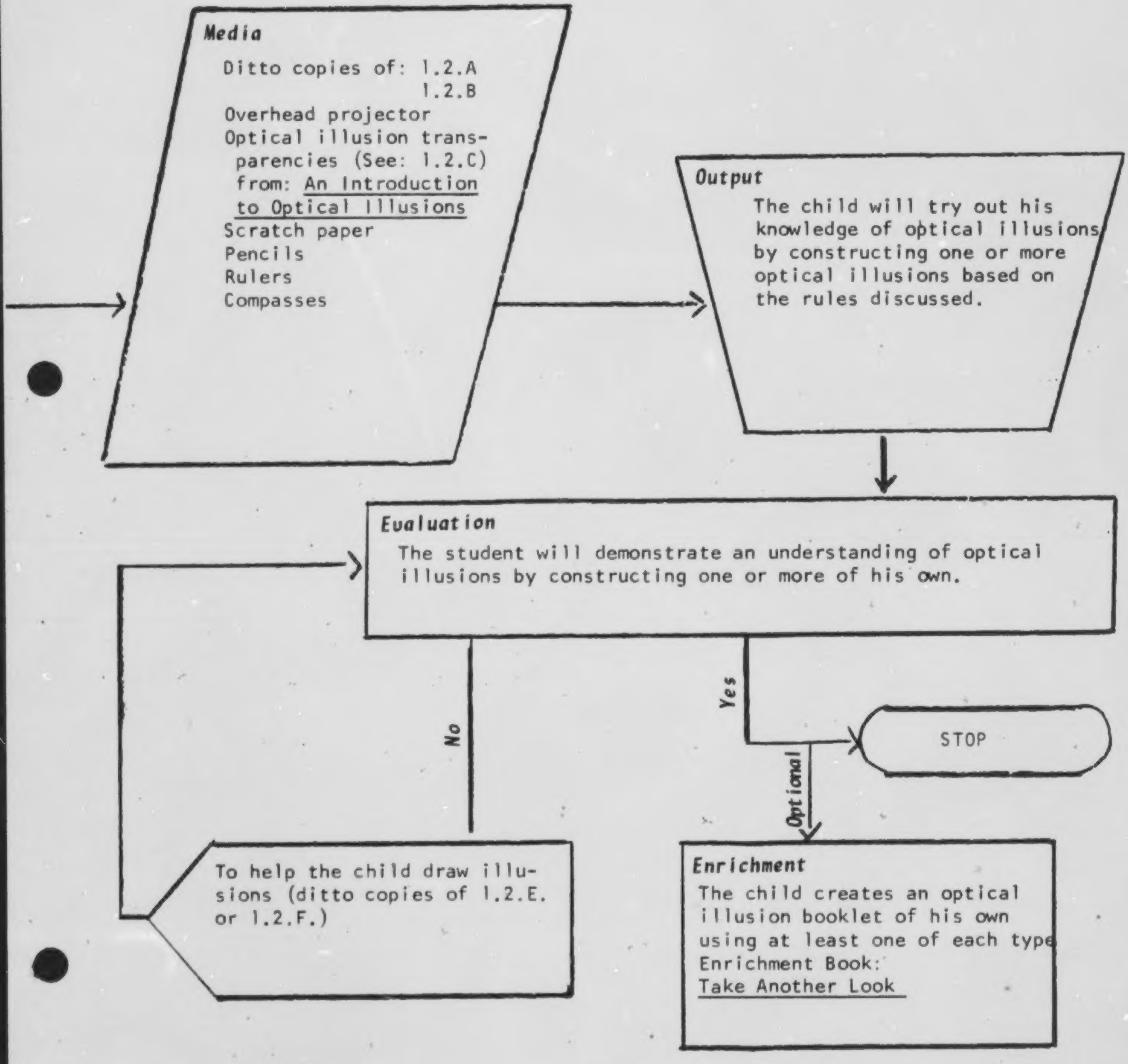
1. Use ditto copies of the bird/antelope paper - cut it in half and give out one part at a time. (See: 1.2.A)

   Give each child a copy of "The Undecidables" and through discussion determine how they are created. (See: 1.2.B)

Learning Opportunities

1. The teacher shows transparencies showing various kinds of optical illusions. (See: 1.2.C, Examples 1-8)
   A. Discuss how the eye is forced and what this does to the mind's perception of the object.
   B. Discuss what characteristics the illusion has to "fool" the eye.
   C. Formulate rules for creating optical illusions. (See: 1.2.C)

Note: The teacher should use only as many examples of optical illusions as is necessary to develop an understanding of the process.



Media

Ditto copies of: 1.2.A
1.2.B
Overhead projector
Optical illusion transparencies (See: 1.2.C) from: An Introduction to Optical Illusions
Scratch paper
Pencils
Rulers
Compasses

Output

The child will try out his knowledge of optical illusions by constructing one or more optical illusions based on the rules discussed.

Evaluation

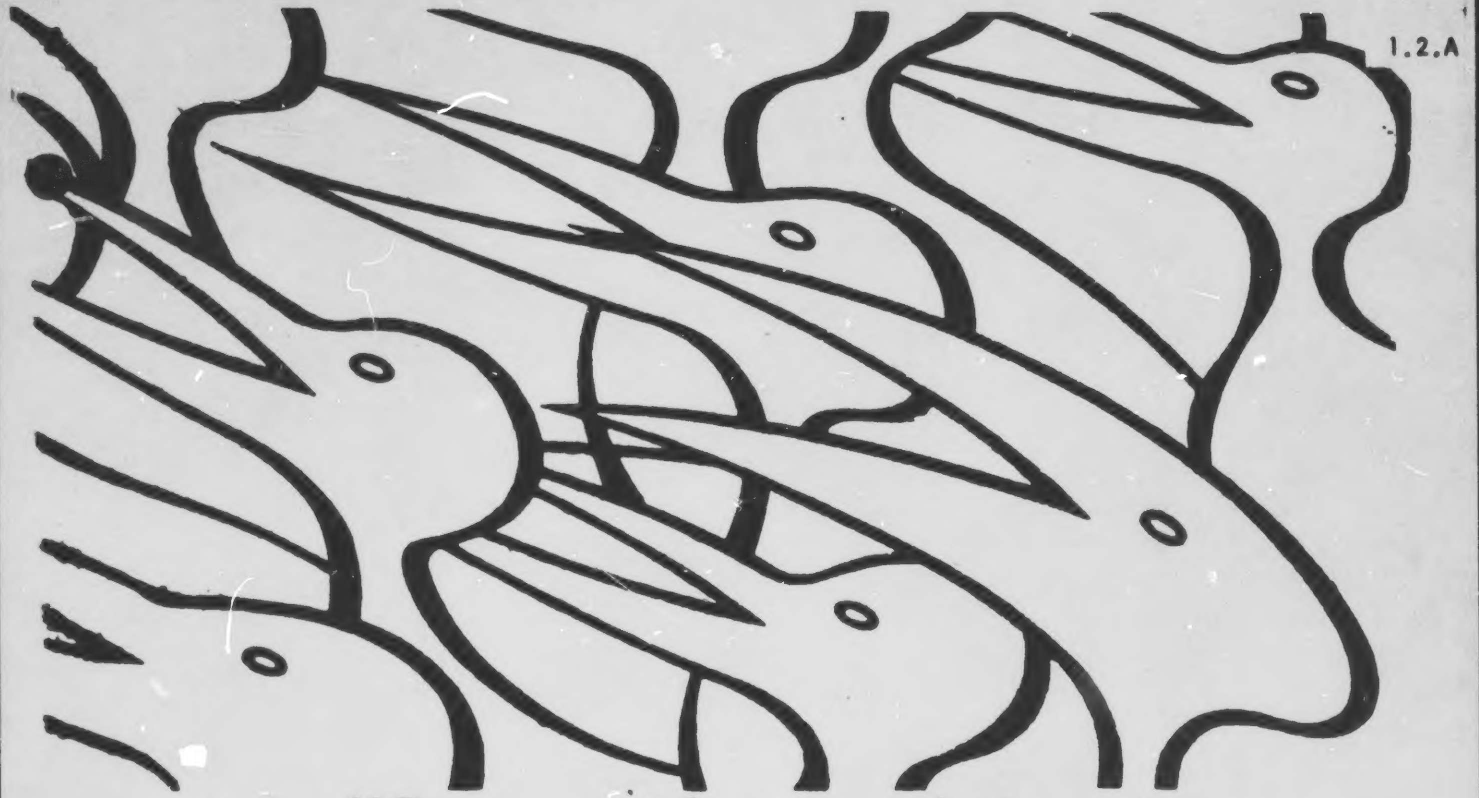
The student will demonstrate an understanding of optical illusions by constructing one or more of his own.

To help the child draw illusions (ditto copies of 1.2.E. or 1.2.F.)

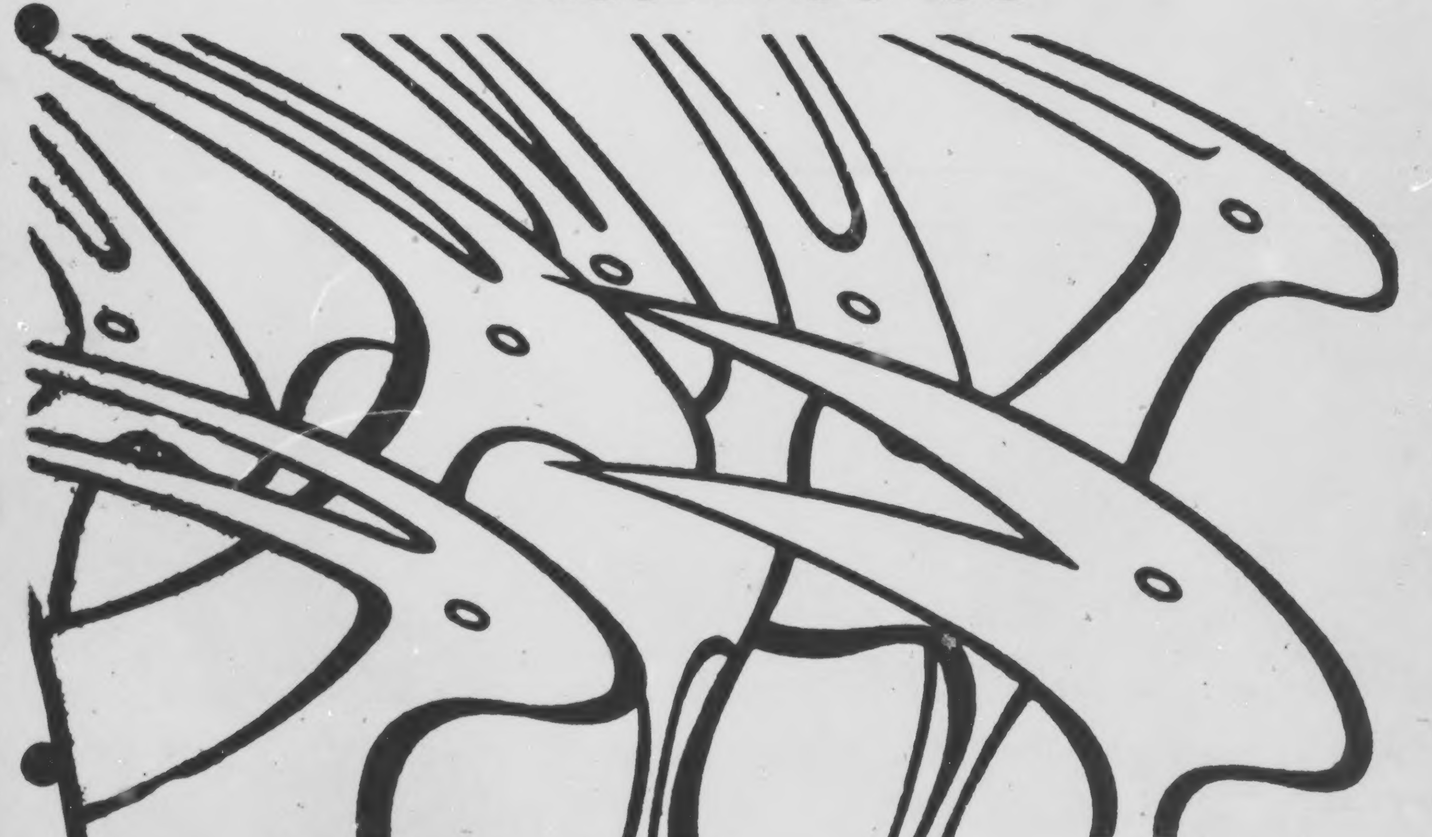
Enrichment

The child creates an optical illusion booklet of his own using at least one of each type
Enrichment Book:
Take Another Look

1.2.A



"Sometimes it's

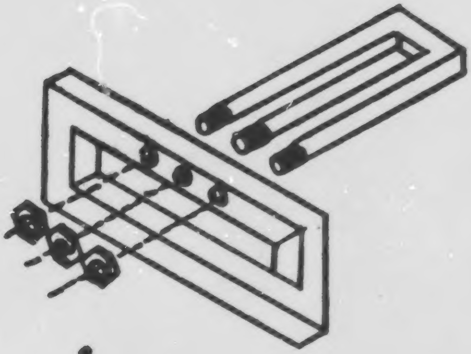


sometimes it's

FOR YOU TO DECIDE:

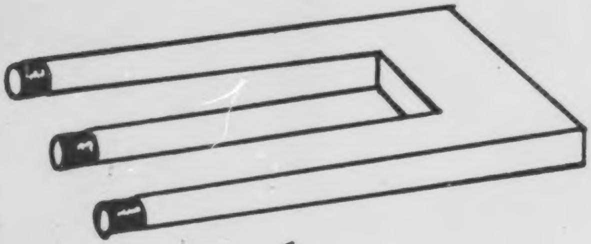
How many prongs does this widget have? There isn't any answer, because if you look at one end you see three prongs, but if you look at the other end you see one slot, so there seem to be only two prongs, one on each end of the slot! Psychologists call it an "undecidable figure". No matter how long you study it, you just can't decide how it is constructed.

On the right you see a wooden frame with three holes in which the widget's prongs are inserted, three nutty nuts to fasten the prongs to the frame, and a crazy crate for carrying all these undecidables until you decide what to do with them!



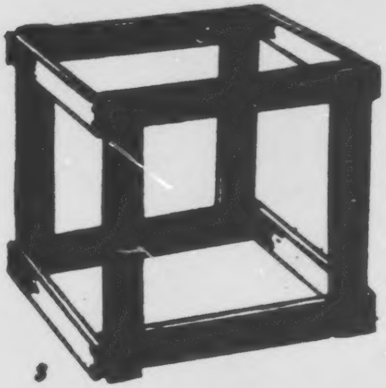
2

Frame for widget and nuts to hold it in plac



1

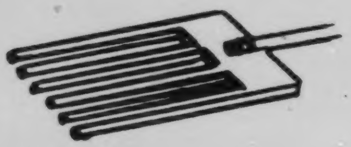
A three-pronged, one-slot widget.



3

Crazy crate for carrying widgets and other undecidable objects.

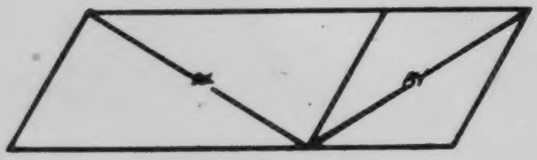
Look closely at the Old Roman Pitchfork. The problem is this:
How many prongs, or "tines" has this old Roman pitchfork?



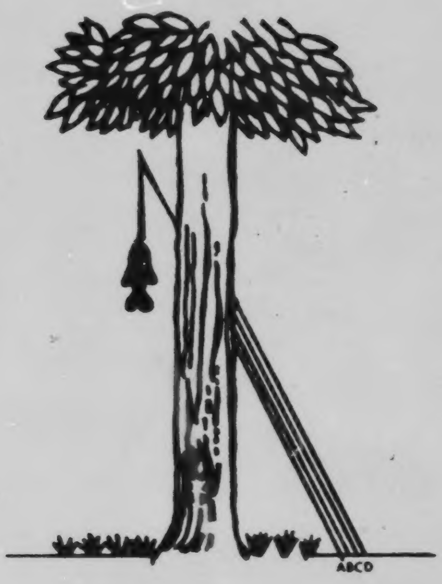
When you first look at it you will probably say six. But now cover the left-hand side of the pitchfork so that none of the prong-ends are visible - then estimate how many prongs there are. You will say four. Where did the other prongs go? - I don't know either!

Now try to solve these problems:

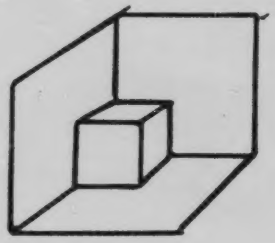
1. Which is longer, AX or AY?



2. Which fishpole caught the fish



3. What do you see here?



HOW TO CREATE AN ILLUSION

We all need to be aware of how we can be deceived by what we see. Artists, designers, engineers, and other people are aware of this and use it in their work. By becoming familiar with optical illusions, we can also learn to understand our surroundings.

TYPES OF OPTICAL ILLUSIONS

1. A vertical line usually appears to be longer than a horizontal one.
2. Figures left open appear to be larger than an equal figure completely closed.
3. Drawings of a three-dimensional figure on a flat surface seem to change.
4. Placing one figure behind the other or drawing with depth make equal figures seem unequal.
5. Surrounding lines or figures make other lines or figures appear distorted.
6. Light-colored figures appear larger than dark-colored figures of equal size.
7. The distance between interrupted parts of a drawing seem to shrink.
8. Others are widgets, continuous boxes, etc.

NOW ---- Try to design a sample of each type

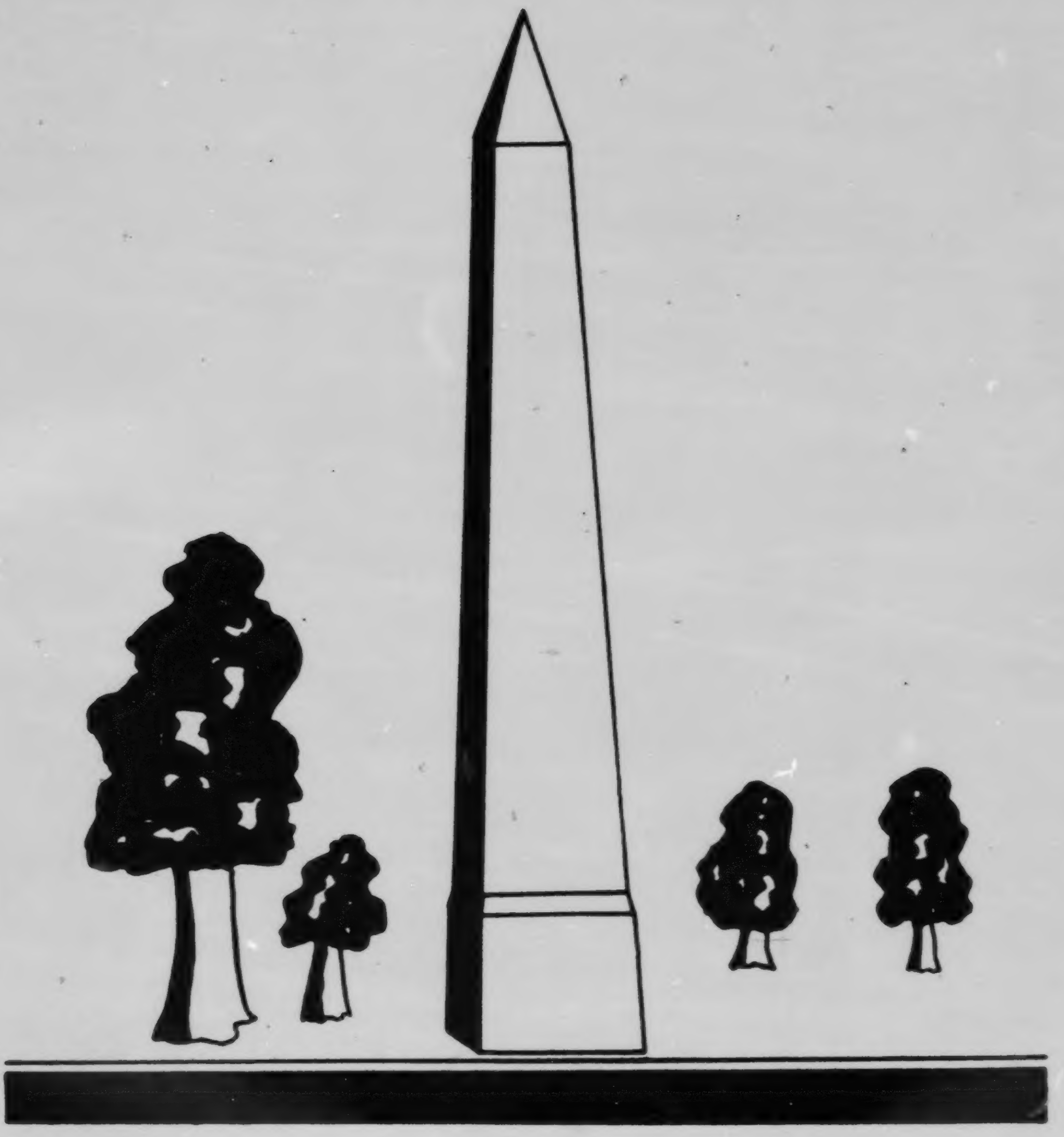
THEN ---- Create a picture or design of optical illusions

THINK ON THIS

Why
is the Parthenon
in Athens, Greece the
most famous, real-life example
of an optical illusion?

?

1.2.C.
Example 1

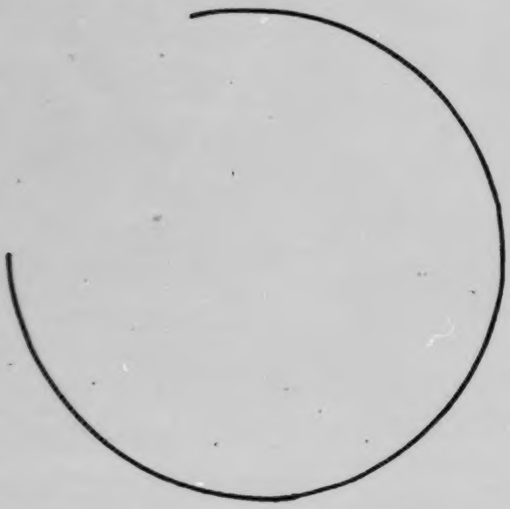


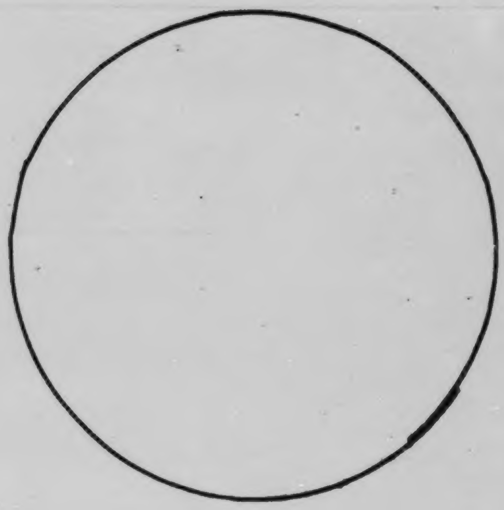
Which is the greater, the height of the monument or the length of the heavy black line along the bottom? They really are the same. You can prove it by using a ruler. In this kind of lusion, the upright section seems longer than the horizontal one.

From An Introduction to Optical Illusions, J. Weston Walch, Publisher.

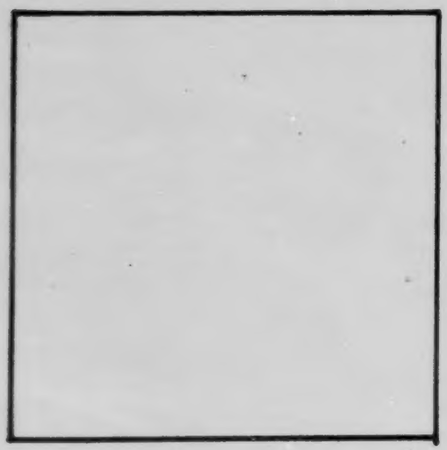
1.2.C.
Example 2

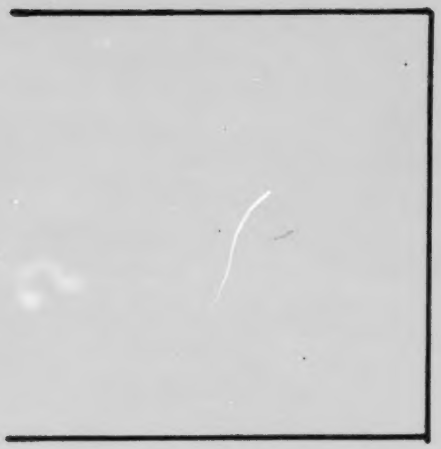
Which circle looks larger?



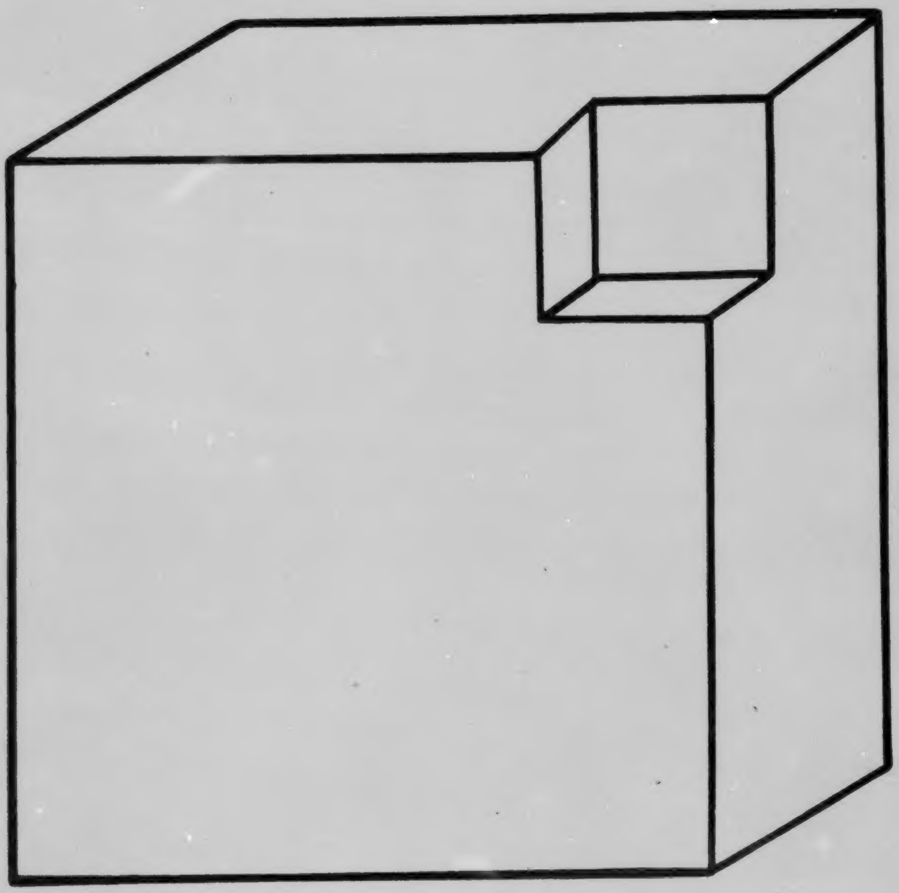


Which square looks larger?



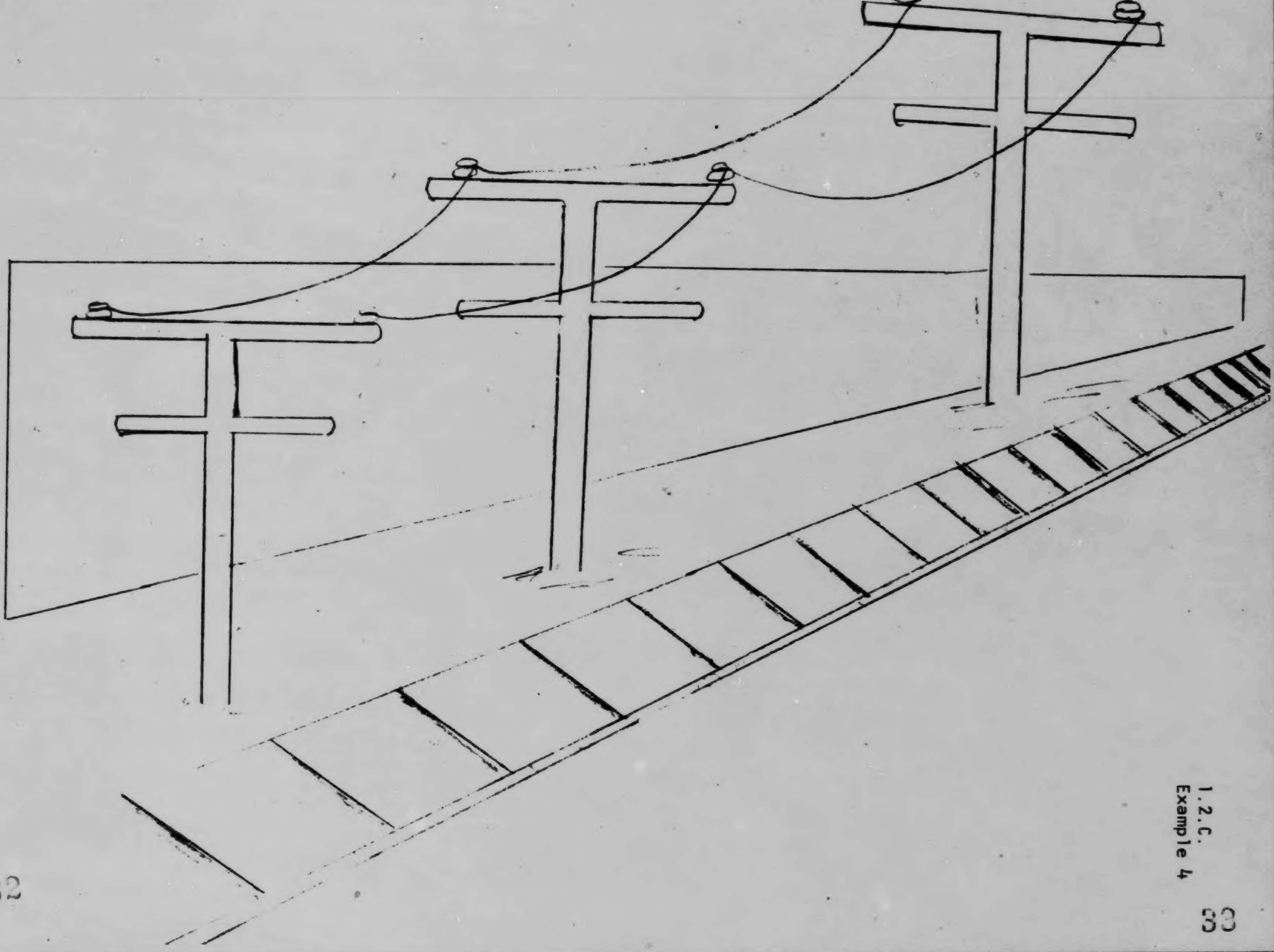


1.2.C.
Example 3



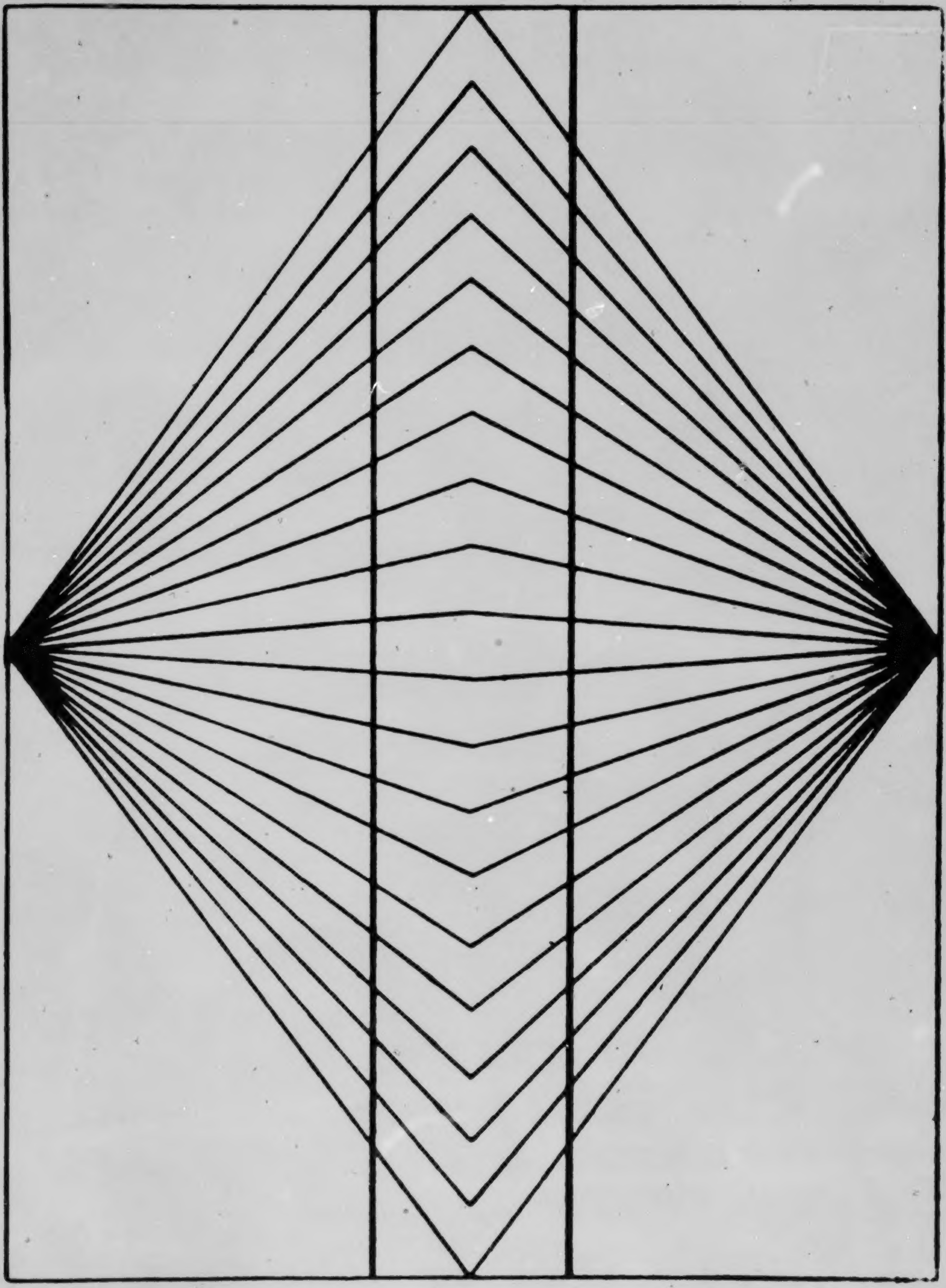
How does this drawing look? Do you see a small box in the corner of a room, a small cube cut out of a large cube, or a small cube in front of a large cube? Look closely and try to see if all three ways of seeing are possible. This is a type of drawing that may have two or more interpretations. Such illusions often happen in trying to illustrate a third dimensional figure on a flat surface.

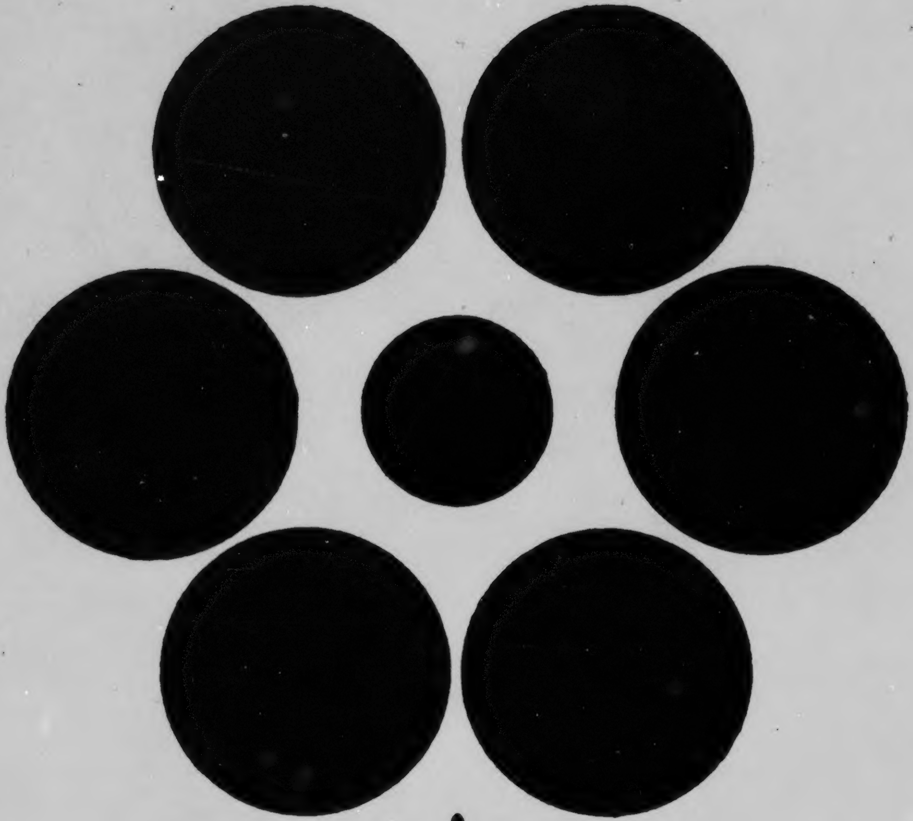
From An Introduction to Optical Illusions, J. Weston Walch, Publisher



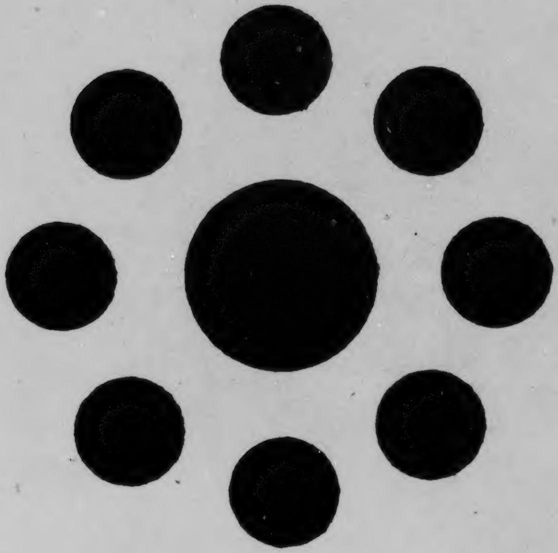
1.2.C.
Example 4

1.2.C.
Example 5



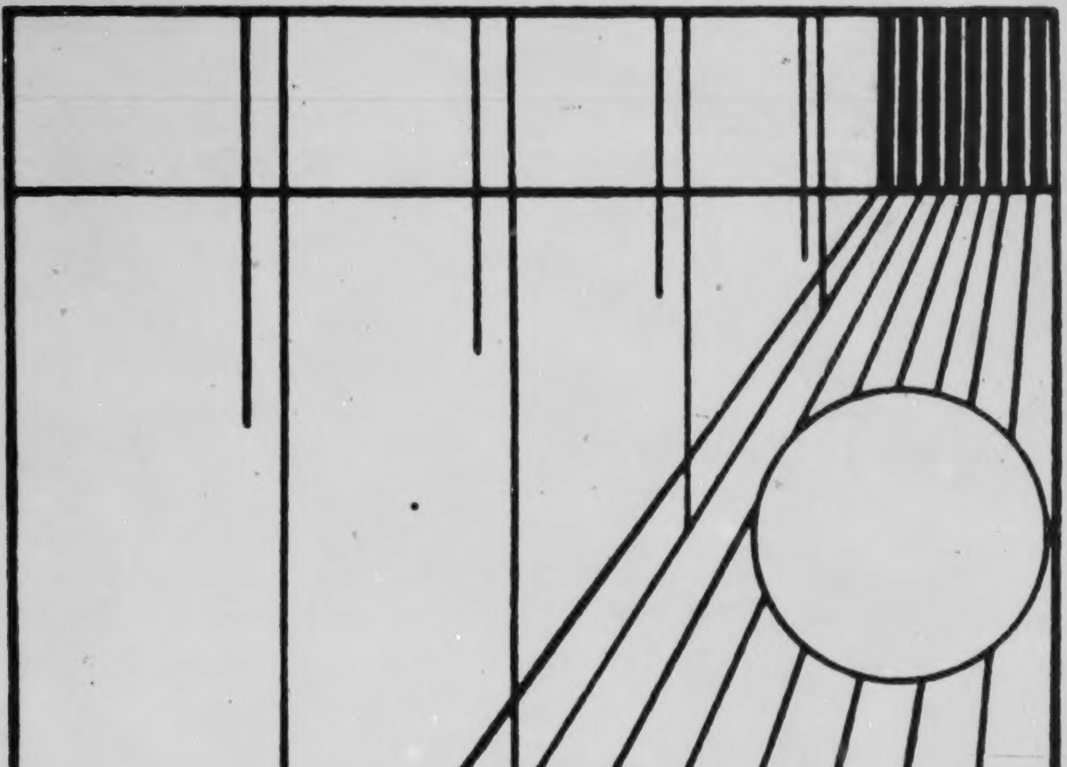


A

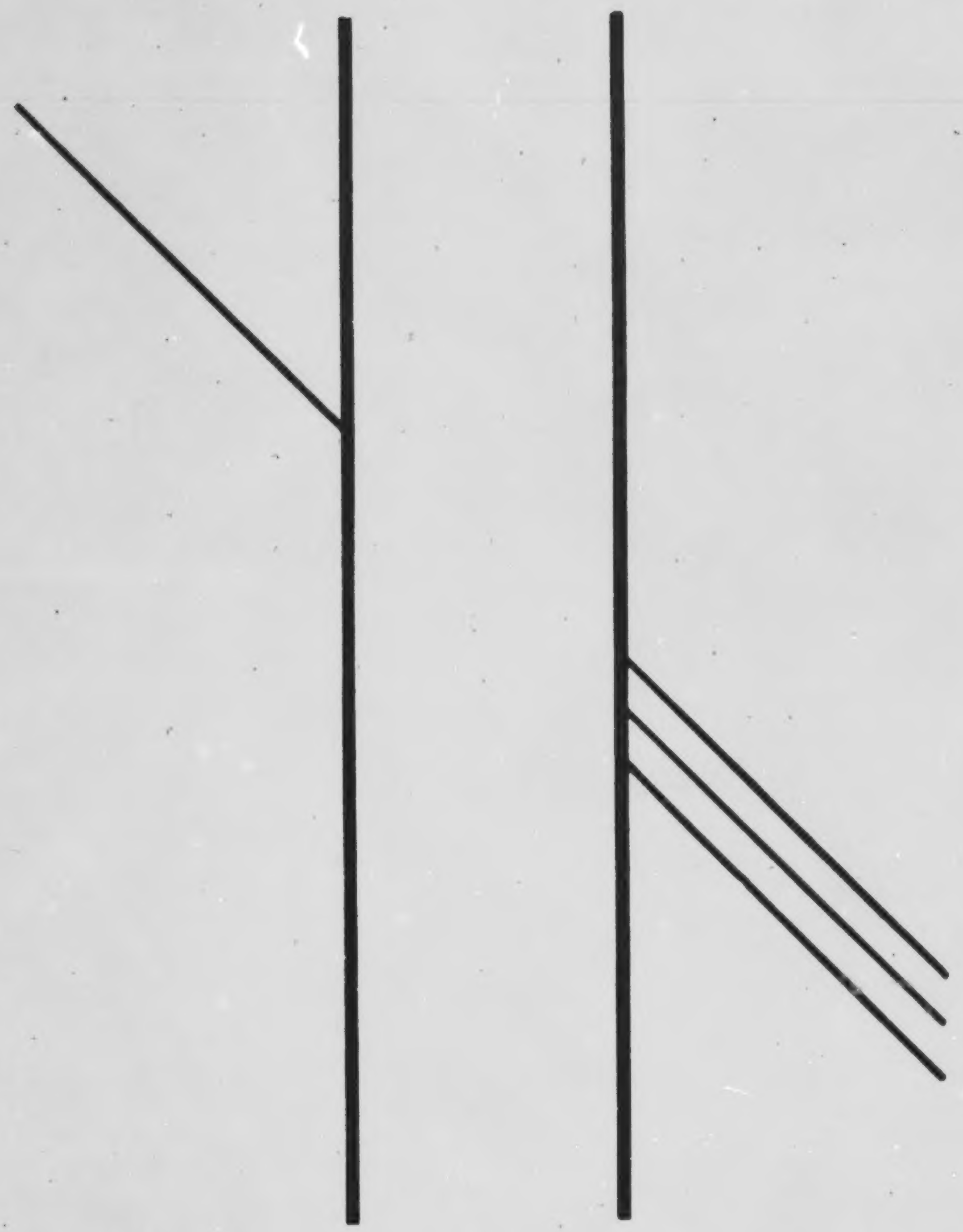


B

1.2.C
Example 5



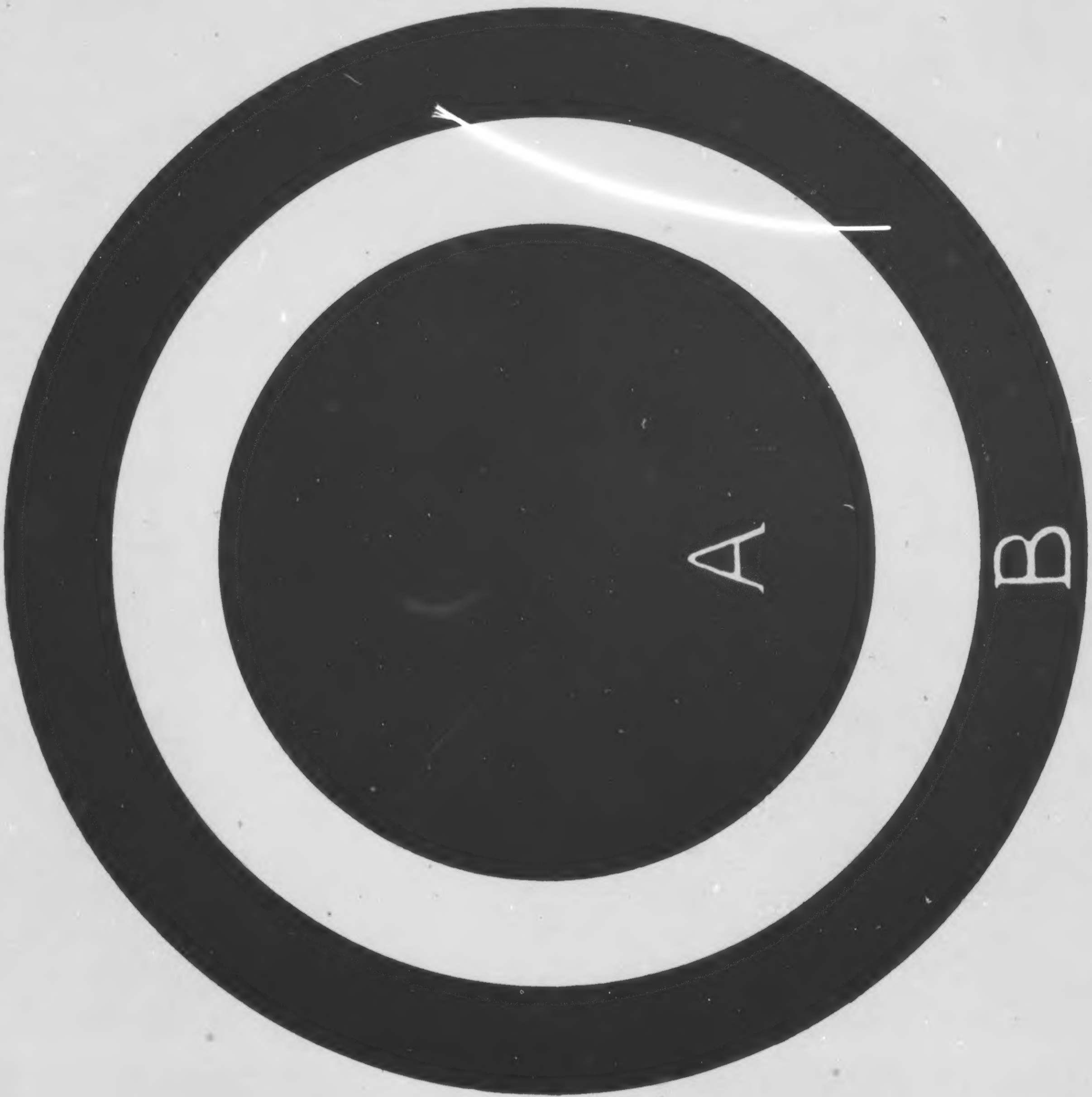
From An Introduction to Optical Illusions, J. Weston Walch, Publisher



Which of the line segments on the right is the extension of the line on the left? Is it the pper, middle, or lower segment? Most people would say that the lower left segment is the one extended - but is it? Use a ruler to find out. The distance between the interrupted lines appears to shrink and creates an illusion in the continuation of the original line.

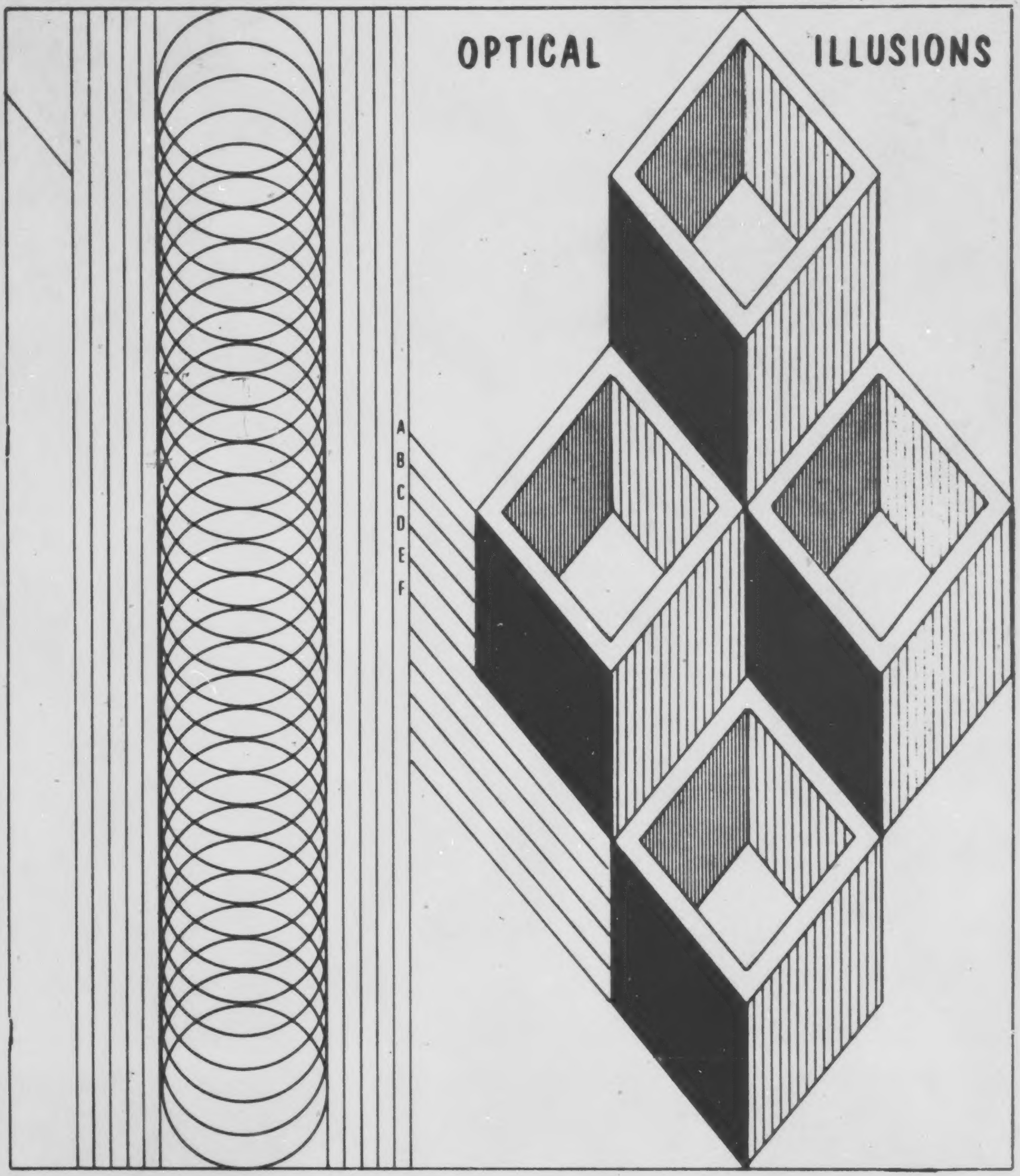
From An Introduction to Optical Illusions, J. Weston Walch, Publisher

Which of the areas appears to be greater? Is it the black circle (A), or the black ring (B)? Most people say that the black circle is greater in area than the black ring. Do you agree? Both areas are actually the same. This illusion has not been classified as to type.



From An Introduction to Optical Illusions, J. Weston Walch, Publisher

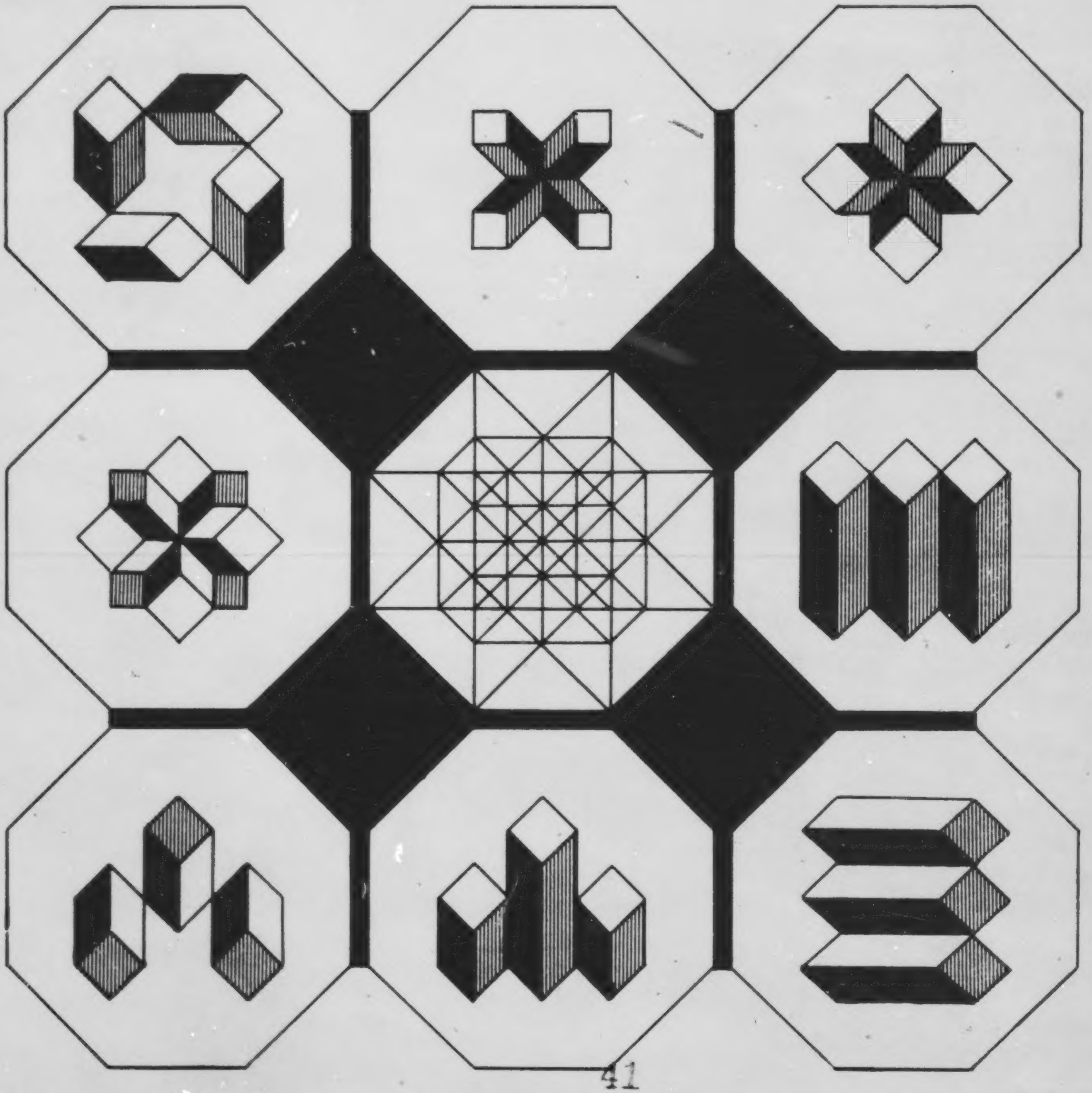
IF THE OBLIQUE (SLANTING) LINE AT THE UPPER LEFT WAS EXTENDED DOWNWARD, WHICH LINE WOULD IT JOIN? DOES THE COIL OF CIRCLES OPEN AT THE BOTTOM OR TOP? IS THE OPENING ON THE "BOXES" ON THE TOP OR IN FRONT?



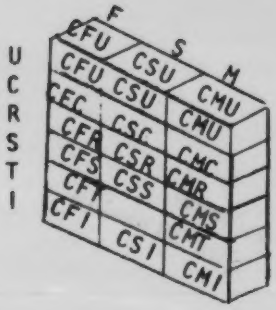
From Aftermath Book 2, page 50 published by Creative Publications Inc. Palo Alto.

HIDDEN SHAPES

THE EIGHT SHADED FIGURES BELOW ARE ALL CREATED FROM THE PATTERN IN THE CENTER. CAN YOU SEE HOW EACH PATTERN WAS MADE? WHICH IS AN OPTICAL ILLUSION? PLACE A PIECE OF TRACING PAPER OVER THE CENTER PATTERN AND MAKE THESE DESIGNS OR SOME OF YOUR OWN CREATION.



From Aftermath Book 3, page 20, published by Creative Publications, Palo Alto, California.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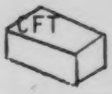
Concept Cognition

Curricular Objective

1.3 The student will demonstrate a knowledge of applying optical illusions by incorporating them into a picture or design of his own.



Input

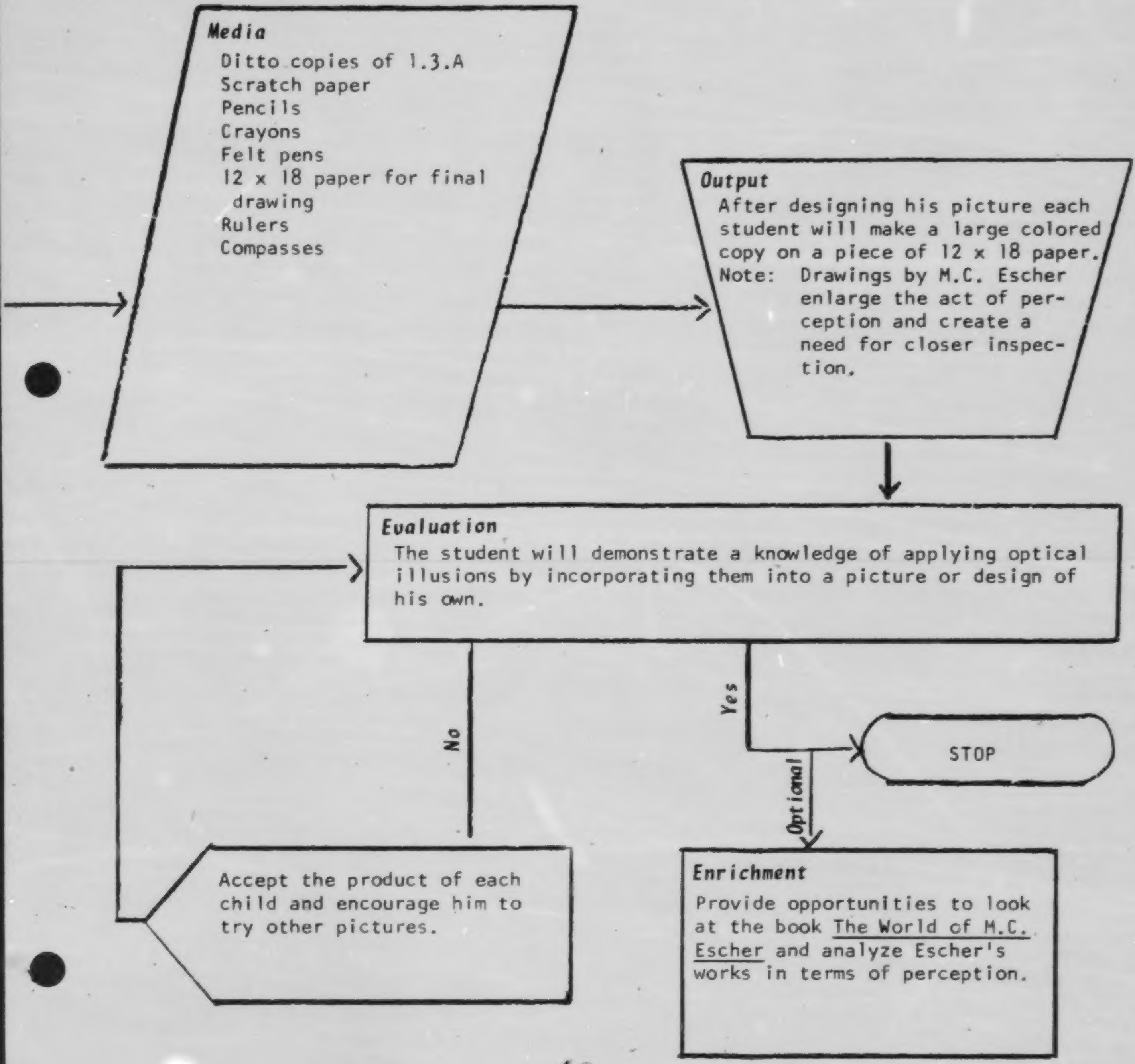
Discuss where one might see optical illusions in real life.

The children observe at home and on the playground to find "real" optical illusions.

Learning Opportunities

I. Discuss how optical illusions are used to make unusual objects look ordinary.
  A. Analyze the ditto copy of the "three pronged widget" and how it was transformed into a real-looking object. (See: 1.3.A)
  B. Analyze and try to reproduce the "stairway to nowhere." (See: 1.3.A)

II. Each child should create a picture or design using optical illusions as a part.
  A. The illusions should be incorporated into the picture so that the unusual looks "normal."



Media

- Ditto copies of 1.3.A
- Scratch paper
- Pencils
- Crayons
- Felt pens
- 12 x 18 paper for final drawing
- Rulers
- Compasses

Output

After designing his picture each student will make a large colored copy on a piece of 12 x 18 paper.

Note: Drawings by M.C. Escher enlarge the act of perception and create a need for closer inspection.

Evaluation

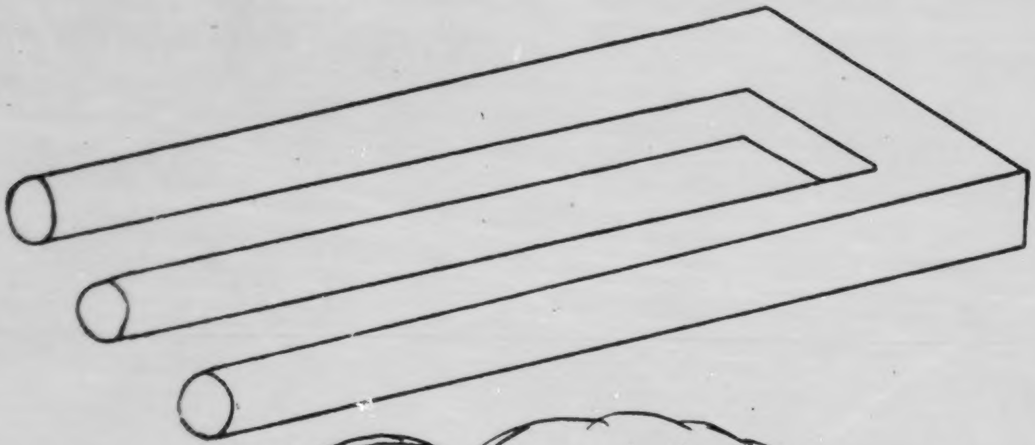
The student will demonstrate a knowledge of applying optical illusions by incorporating them into a picture or design of his own.

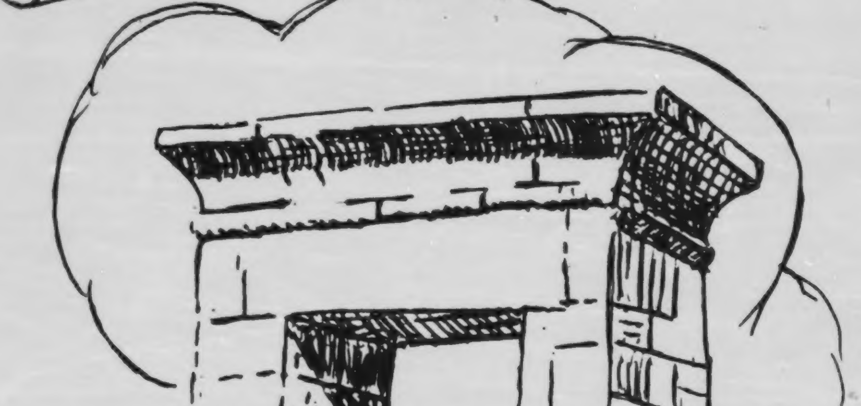
Accept the product of each child and encourage him to try other pictures.

Enrichment

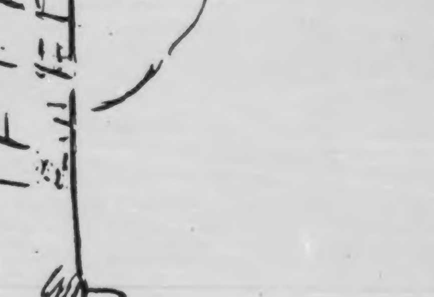
Provide opportunities to look at the book The World of M.C. Escher and analyze Escher's works in terms of perception.

1.3.A.

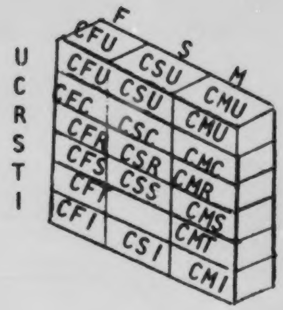




Roger Hayward's "undecidable" monument



From Scientific American magazine.
Scientific American, Inc., New York, 1974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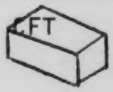
Concept Cognition

Curricular Objective

1.4 The student will demonstrate an understanding of how perception can vary by creating two-way pictures of his own.



Input

Discuss how perceptions can change by how one views the things about him.

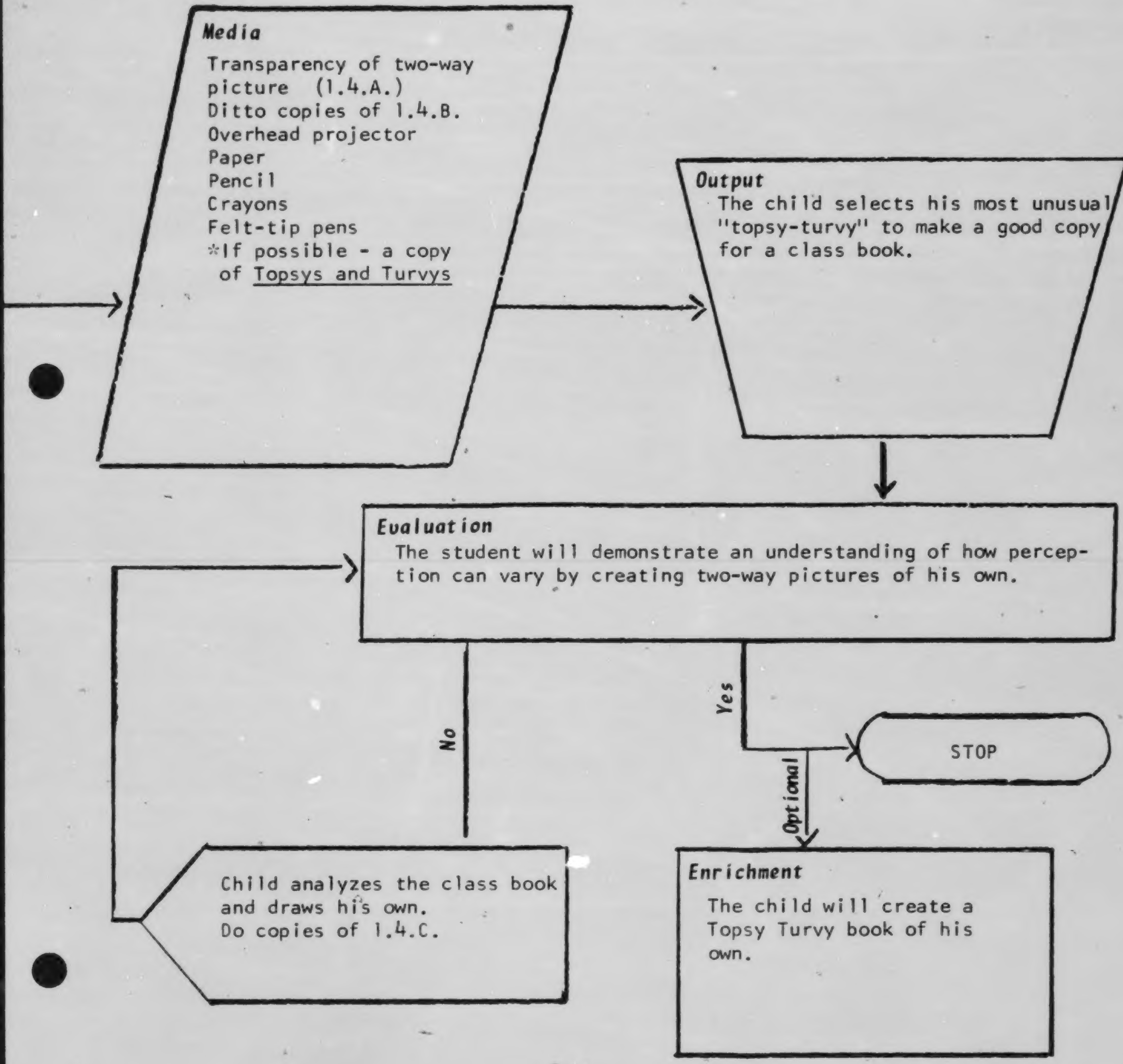
Discuss how tastes in food, clothing, etc., vary and how opinions about them are formed.

Learning Opportunities

I. Project the two-way picture transparency. (See: 1.4.A.)
   A. Discuss what the picture represents both ways.
   B. Discuss how this is done:
      1. Placement of details
      2. Shading
      3. Use of similar objects

II. Show examples from the book Topsys and Turvys - Dover Press, 1964 (See: 1.4.B.)

III. Each child will design three "topsy-turvy" pictures.



Media

Transparency of two-way picture (1.4.A.)
Ditto copies of 1.4.B.
Overhead projector
Paper
Pencil
Crayons
Felt-tip pens
*If possible - a copy of Topsys and Turvys

Output

The child selects his most unusual "topsy-turvy" to make a good copy for a class book.

Evaluation

The student will demonstrate an understanding of how perception can vary by creating two-way pictures of his own.

Child analyzes the class book and draws his own.
Do copies of 1.4.C.

Enrichment

The child will create a Topsy Turvy book of his own.

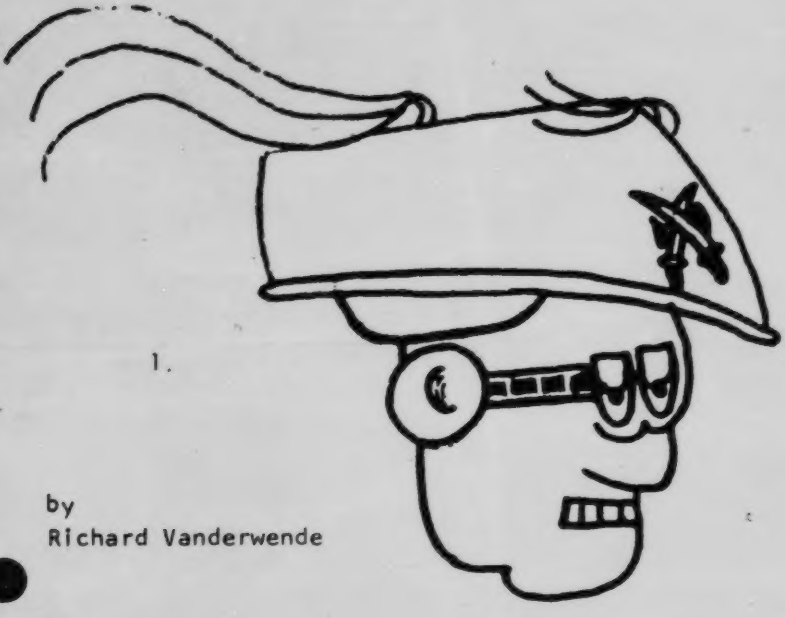
1.4.A.

CAN YOU TELL A TOPSY TURVEY?

Try to Name the Objects Below -

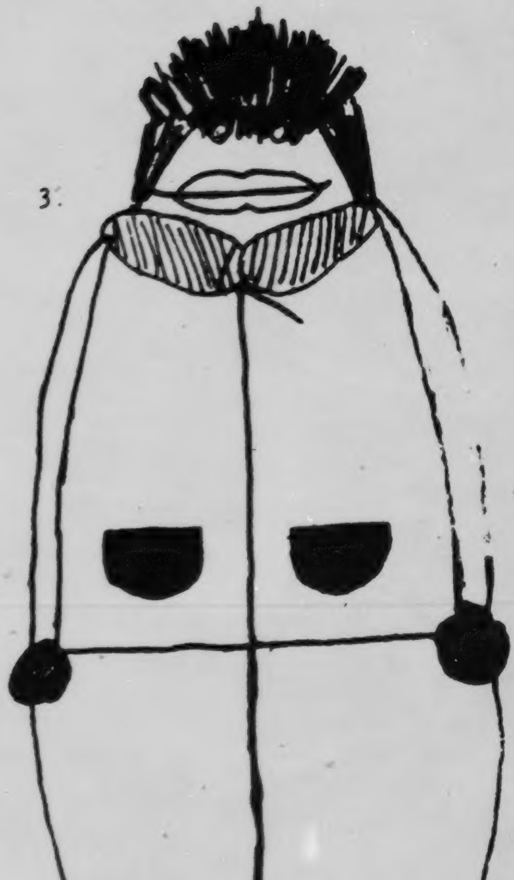
NOW - Turn This Page Around.

1.

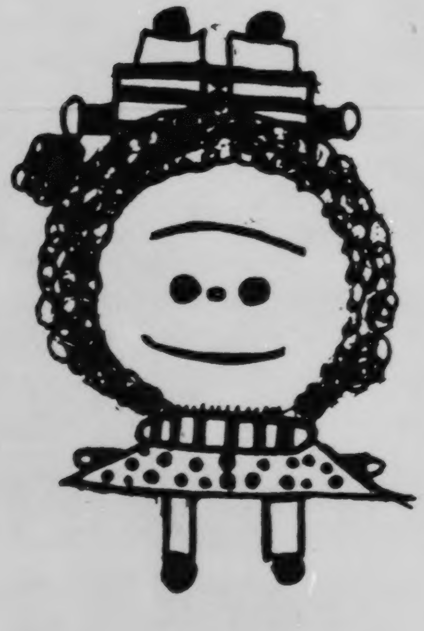


by
Richard Vanderwende

3.



2.

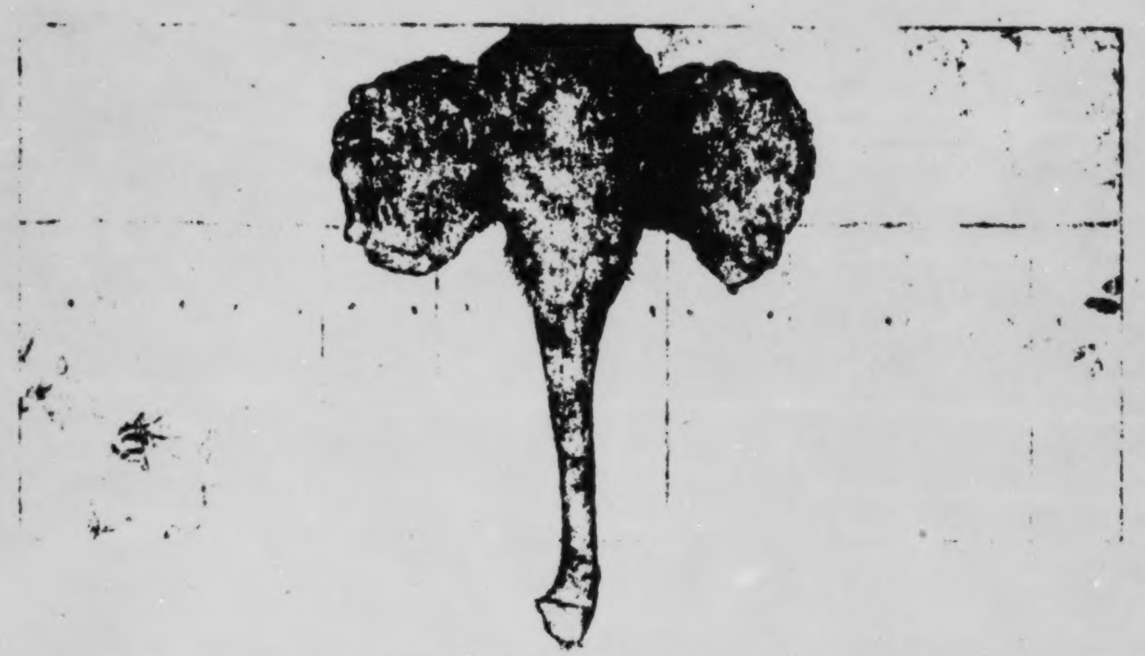


by
Cathy
Eason

WHAT DO YOU SEE?

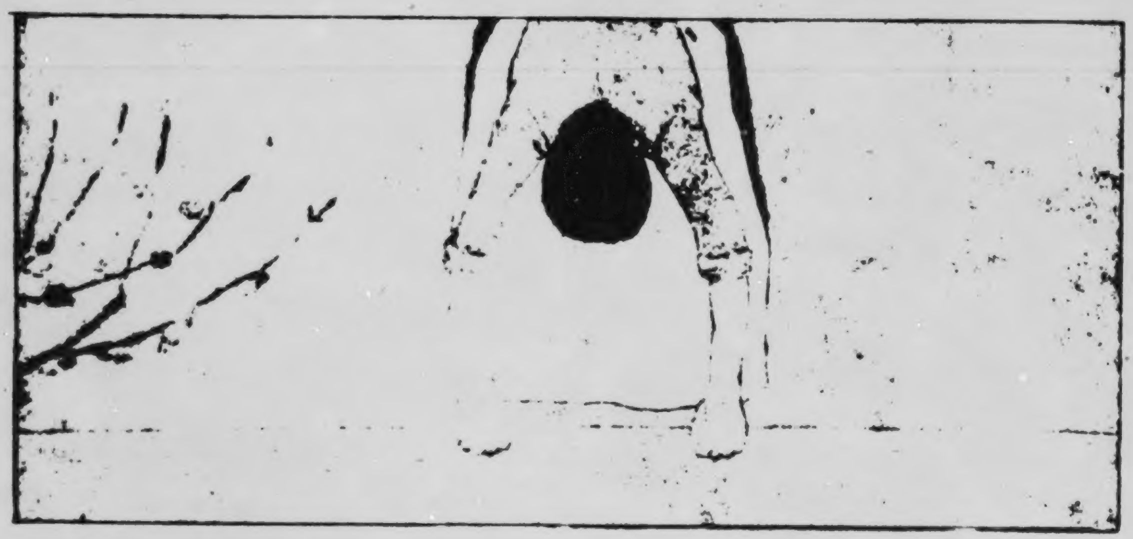
1. Mechanical Soldier - A Cruiser
2. A Queen - A King
3. A Mop-Haired Clown - An English Soldier

The ostrich has a longer neck and smaller mouth than his.



The Elephant leans o'er the fence and wonders why it is

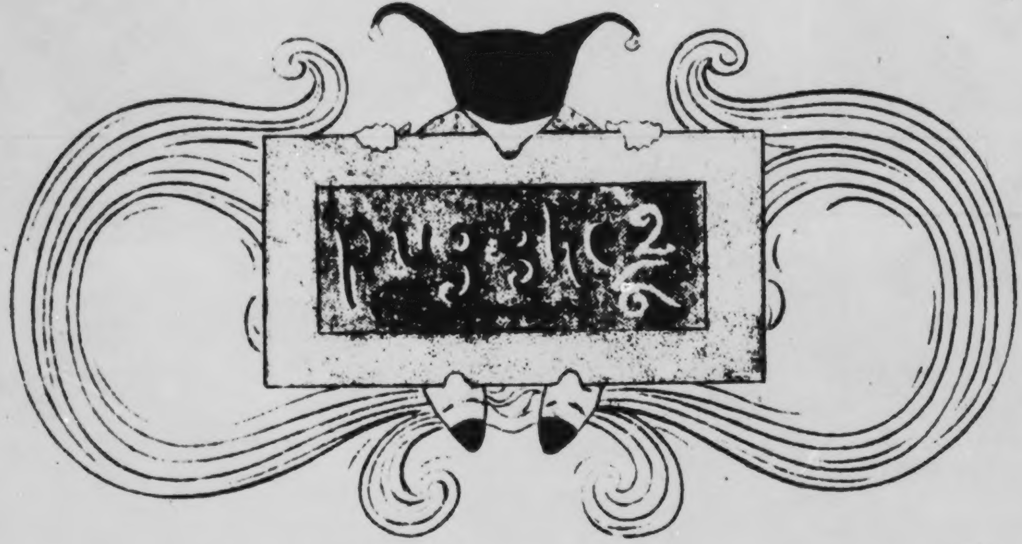
When it's later, the spectator sees her hang her clothes to dry.



Rising early, Mrs. Burley in her garden meets the eye.

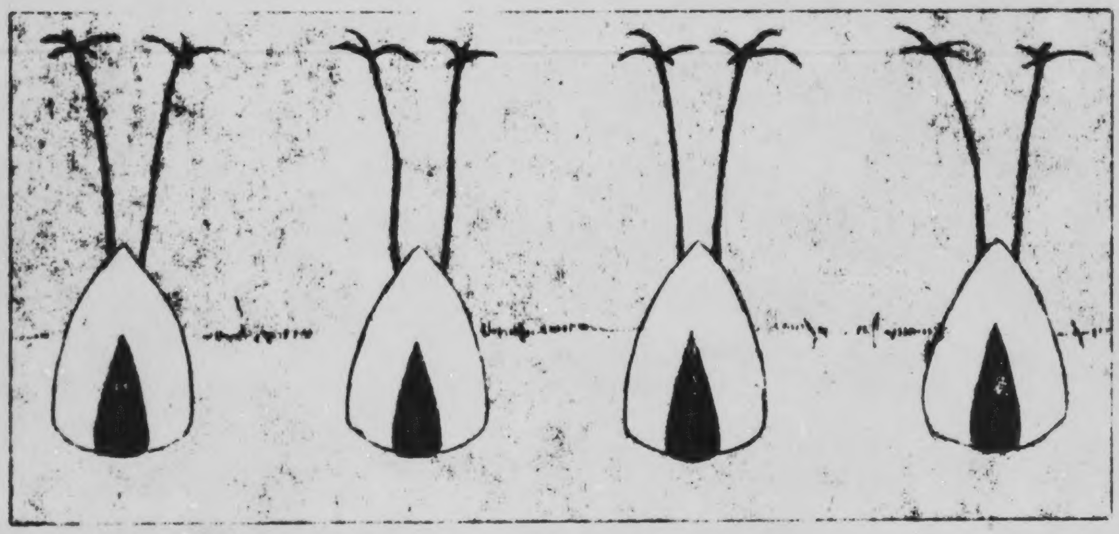
From Topsys & Turvys by Peter Newell, pages 31 and 33, published by Dover Publications, New York, 1964.

We find the ending of this book in plainest text asserted.



And now appears a mystic word, but if it be inverted,

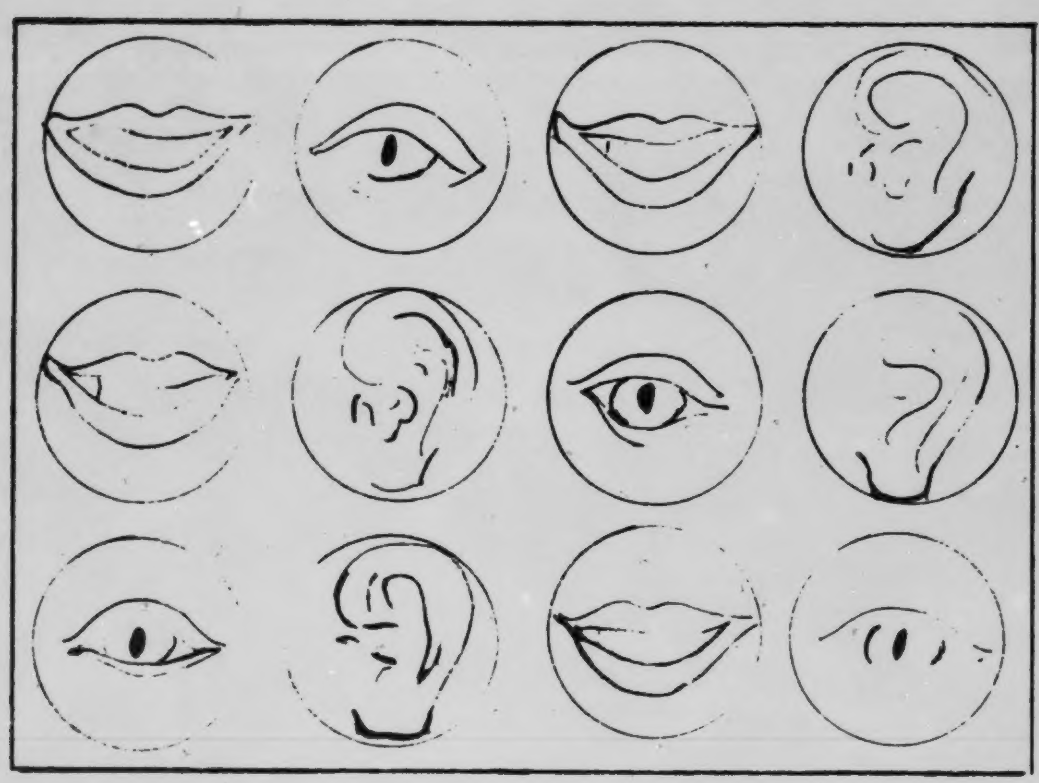
The Storks, on seeing them remarked, "It's time for us to go."



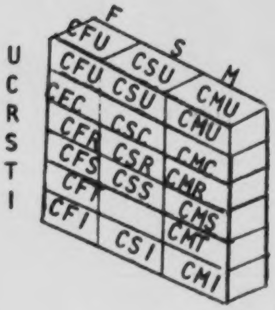
Beneath tall palms some Arabs pitched their tents as white as snow;

From Topsys & Turvys by Peter Newell, pages 6 and 74, published by Dover Publications, New York, 1964.

CAN YOU DIVIDE THE RECTANGLE INTO FOUR EQUAL PARTS WITH SIMILAR SHAPES SO THAT EACH PART CONTAINS AN EAR, AN EYE, AND A MOUTH?



DON'T BE AFRAID TO EXPERIMENT!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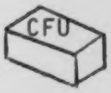
Concept Cognition

Curricular Objective

1.5 The student will develop new words based on his auditory perception.



Input

Teacher should read over pages 1.5.A. and 1.5.B. before presenting this activity.

Discuss how words began.

Have the children form theories on how some objects got their names.

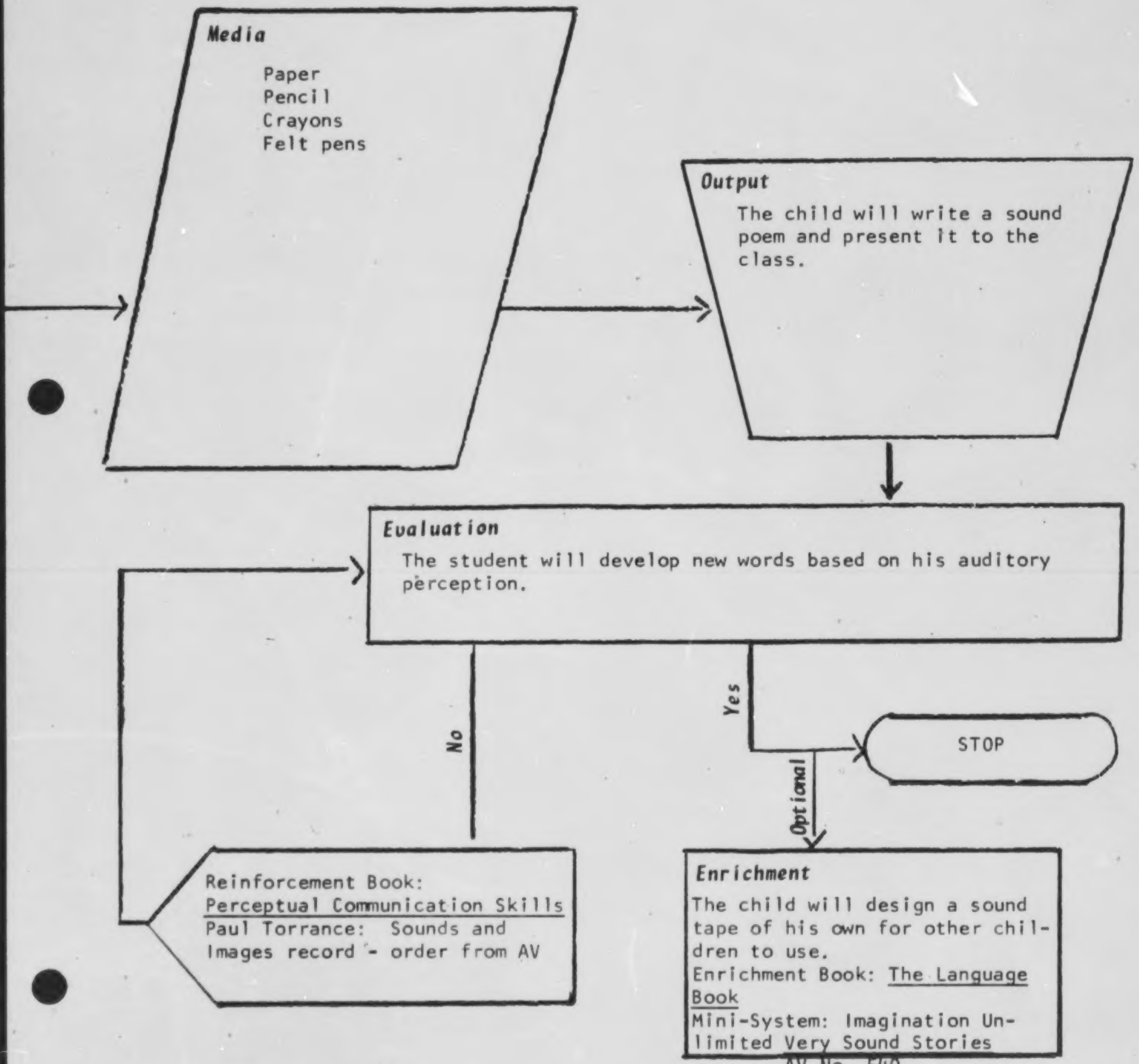
Research the origin of language.

Learning Opportunities

I. Have the children list words made from sounds.
    A. Examples: howls, meow, clank

II. Position the children in places both inside and outside the room.
    A. Have them listen for five minutes to all the sounds they hear.
    B. Ask the children to list all the sounds they hear.

III. When the children come back together ask them to name some of the sounds they heard.
    A. Discuss how much the names they have listed sound like the actual sounds they heard.



Media

Paper
Pencil
Crayons
Felt pens

Output

The child will write a sound poem and present it to the class.

Evaluation

The student will develop new words based on his auditory perception.

Reinforcement Book: Perceptual Communication Skills
Paul Torrance: Sounds and Images record - order from AV

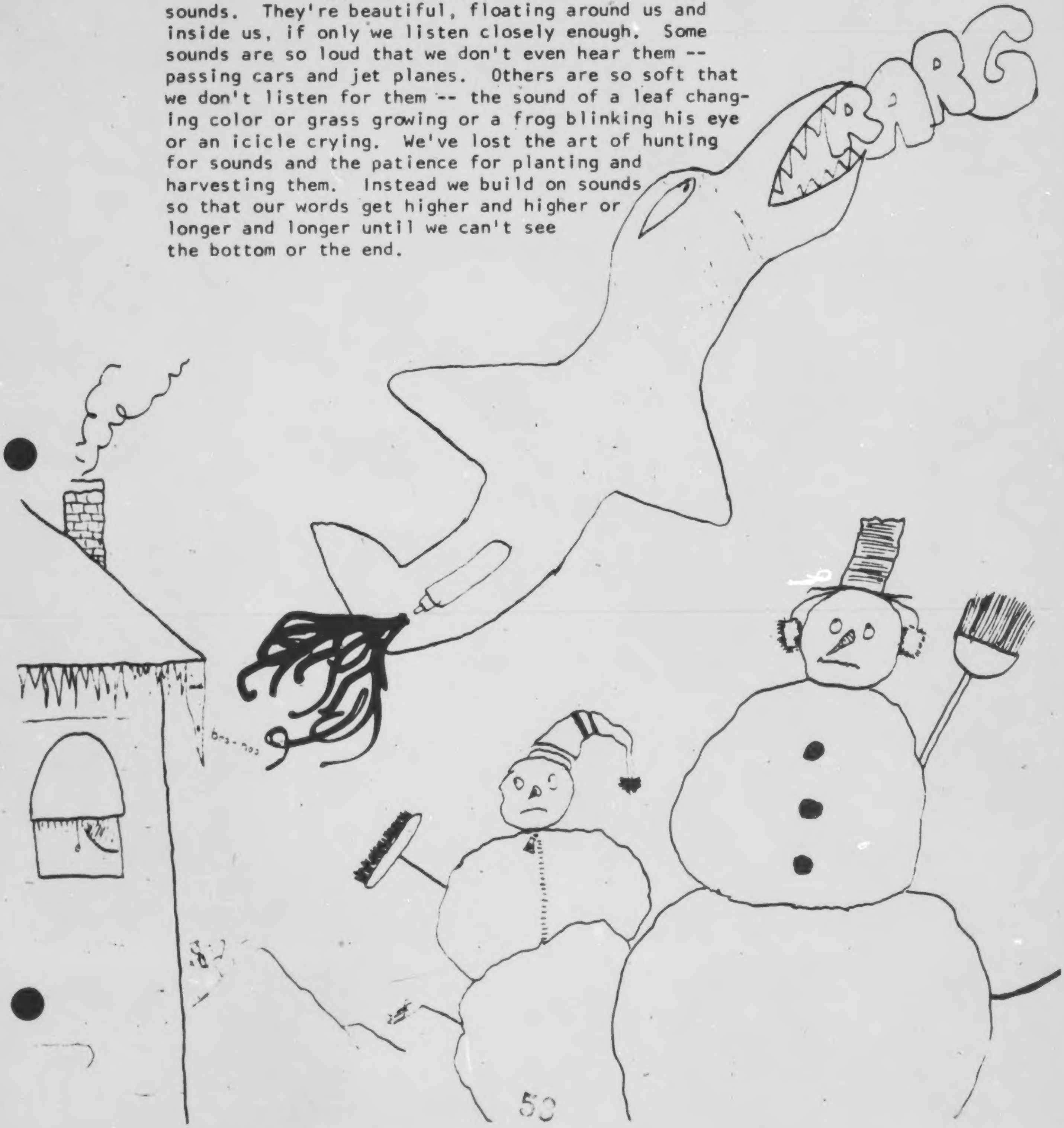
Enrichment

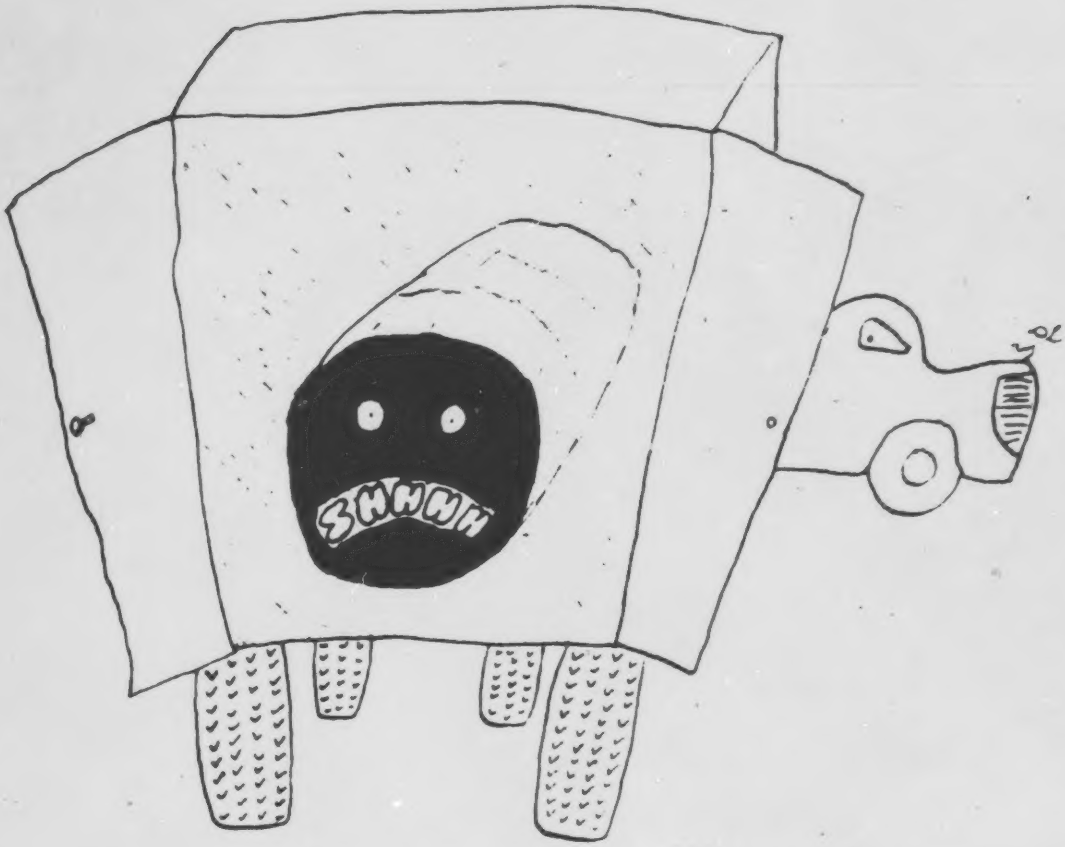
The child will design a sound tape of his own for other children to use.

Enrichment Book: The Language Book

Mini-System: Imagination Unlimited Very Sound Stories
AV No. 540

I have this thing about words. Maybe I shoud say sounds. They're beautiful, floating around us and inside us, if only we listen closely enough. Some sounds are so loud that we don't even hear them -- passing cars and jet planes. Others are so soft that we don't listen for them -- the sound of a leaf changing color or grass growing or a frog blinking his eye or an icicle crying. We've lost the art of hunting for sounds and the patience for planting and harvesting them. Instead we build on sounds so that our words get higher and higher or longer and longer until we can't see the bottom or the end.





Are the children of Mrs. Fuse -- refuse, confuse, transfuse, diffuse, infuse, -- or of Mr. Duce -- reduce, conduce, deduce, induce, seduce -- all the same or does each have his own personality? Are community and immunity twin sisters? They sound and dress and feel alike but they are so different -- one is the belle of the ball and the other is a wallflower. We throw all kinds of prefixes and suffixes onto our words to hide the real feeling underneath them. Are we so afraid to talk to one another? Do we have sounds in our hearts that we want to shout out but must cover up? We seem to put on a suit, crawl into a plastic bag, and climb into a barrel which is rolled on to a truck and parked in a garage. And then we make the sound inside those layers and it comes out so far away that it's barely a rumble and we say, "My, how safe I am, how distant!" And we're secretly pleased because we can't be hurt if we're so far away, and who wants to be hurt, especially by words!

I'd like to share with you new sounds, new feelings, new insights. I'd like to tickle your taste buds and nerve endings, your earlobes and hair roots, your toenails, and belly button. I want to talk to you -- to your stomach, your body, your feelings. Our words must reach down, in, and around. They must touch.

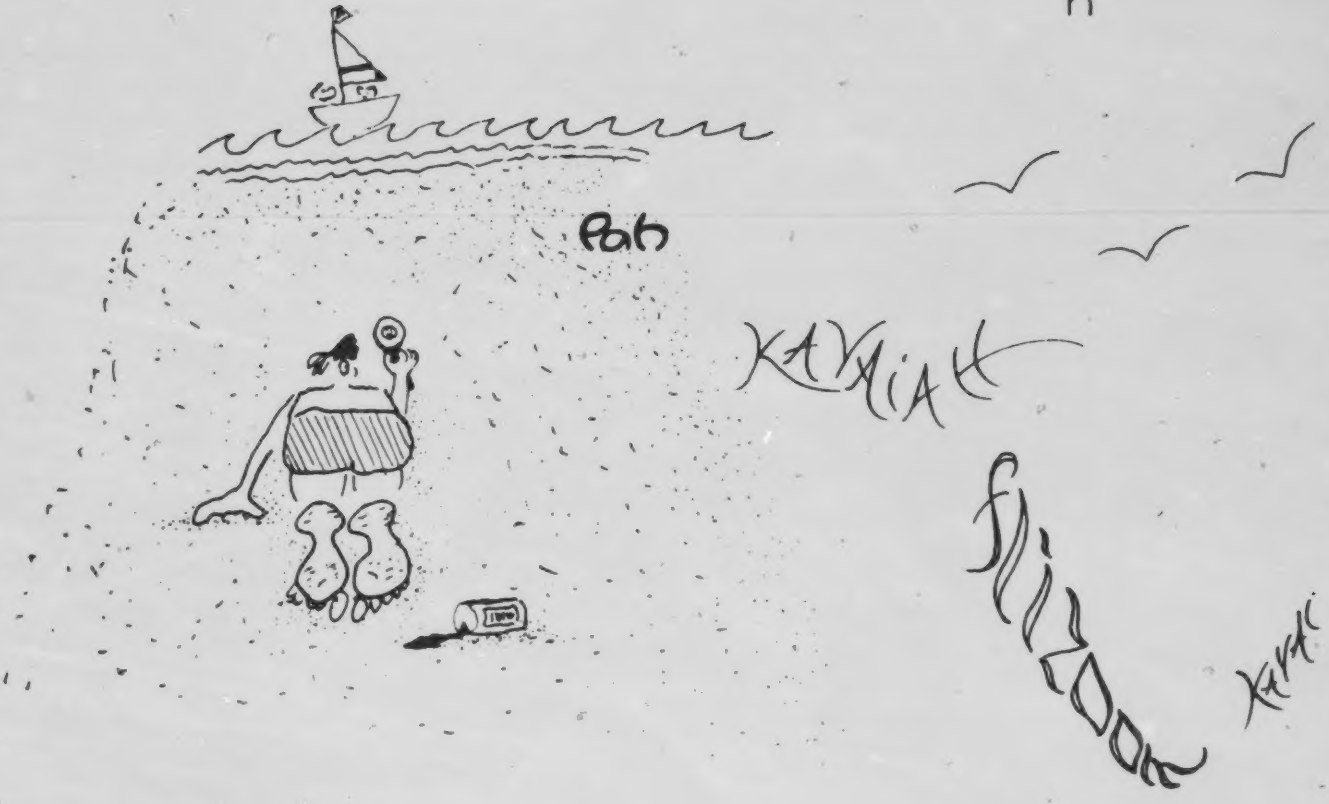
We must become like the Japanese sculptor who showed his works in a large American art museum. As he arranged each statue before the first showing, he placed a little sign at the base of each work that read, "Please touch!"

1.5.B.

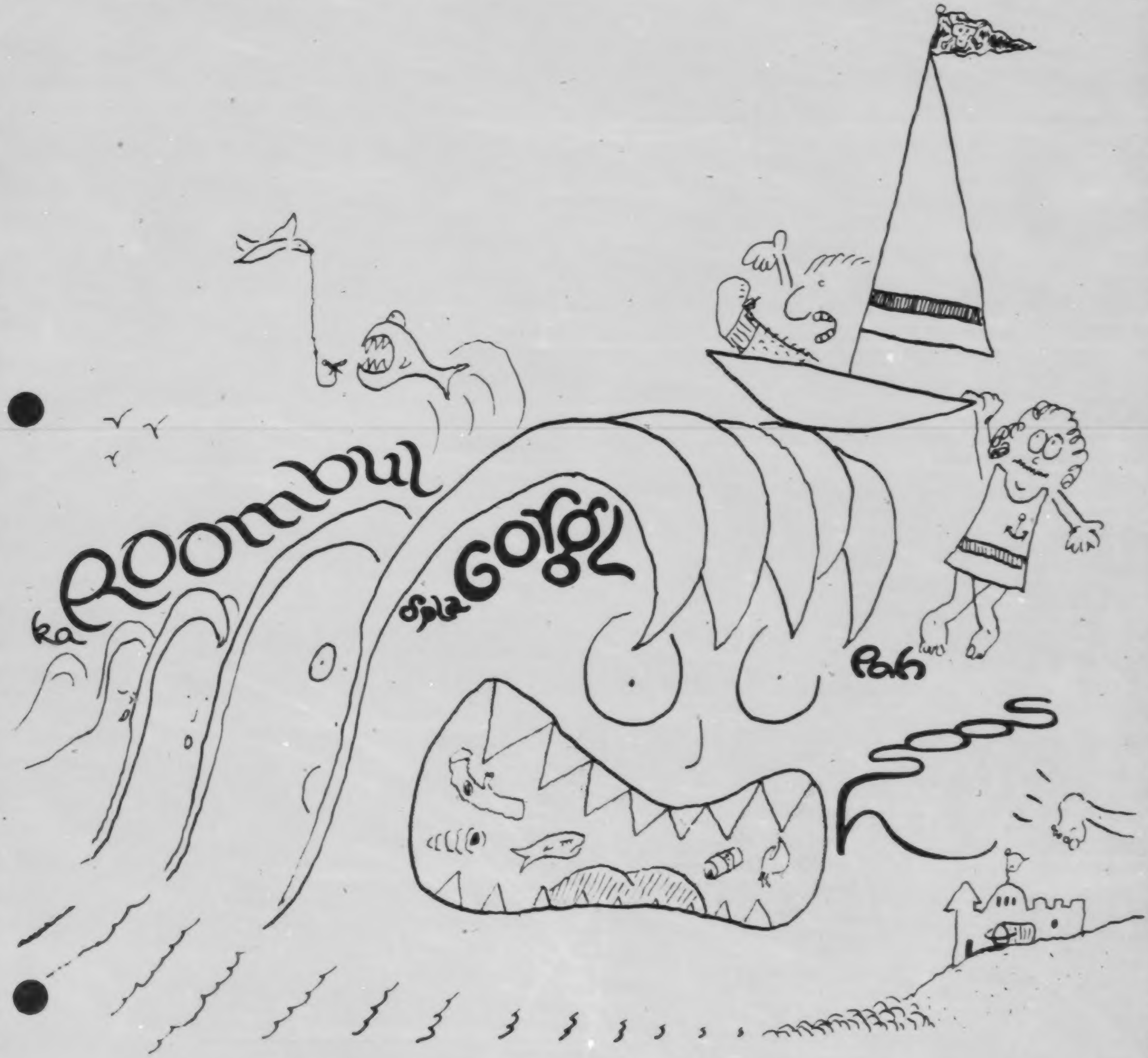
This poem is something special because
it brings us to the sea.

păh kăyáiăh flĭzóom kăyaí

kāróombŭl splăgórgl păh sóosh kăyaí

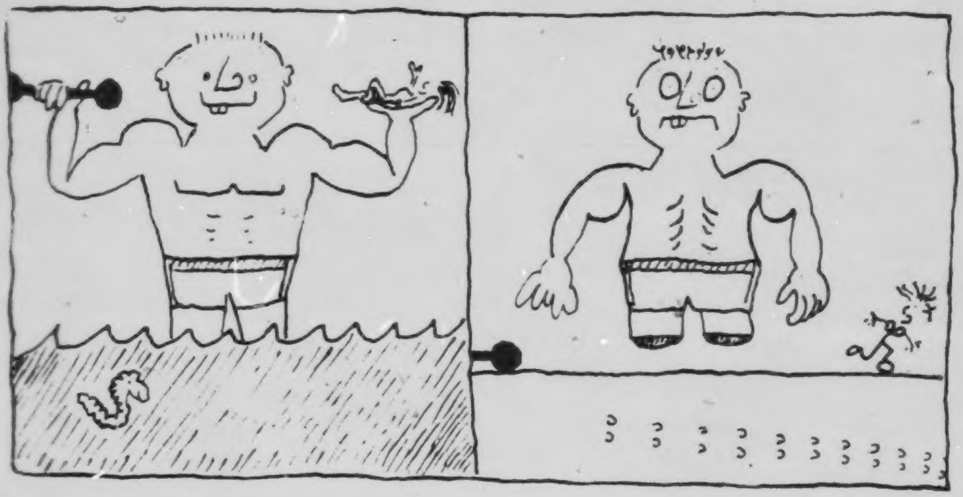

Pah
KAYAIAH
flizoom
KAYAI

The first word, pah, is a grain of sand sitting on a beach. The pah is a speck, flat. And above it you can hear the crying seagulls diving for fish, kayaiah, zooming down, flizoom, and crying again, kayai. Then a wave splashes the shore, showering it with sputtering sea things, karoombul splagorgl. The gorgl is all the things that the sea holds in its mouth gasping for air -- deadwood, dead fish, seashells, stones, beer cans -- karoombul splagorgl. And the sand, that tiny grain, that pah is swallowed by the wave that sweeps it back, pahsoosh! Then the seagulls cry again, kayai. Become the sea, sand, seagulls, and deadwood and make their sounds again.

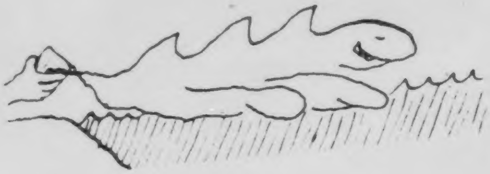


1.5.B.

There is always something about the song the wave sings to the shore that makes me stay by the seaside. Maybe it is the same wish that calls a moth to a flame or a leaf to the winds. There are times when I would like to gather the most powerful men in the world together on a beach and take them walking along the shore. They would go barefoot over the sand and I would ask them to make deep footprints and pretend that each step was a big business, a high office, an important award, a great victory, or a famous book. Then I would have them turn around and watch the waves erase their footprints.



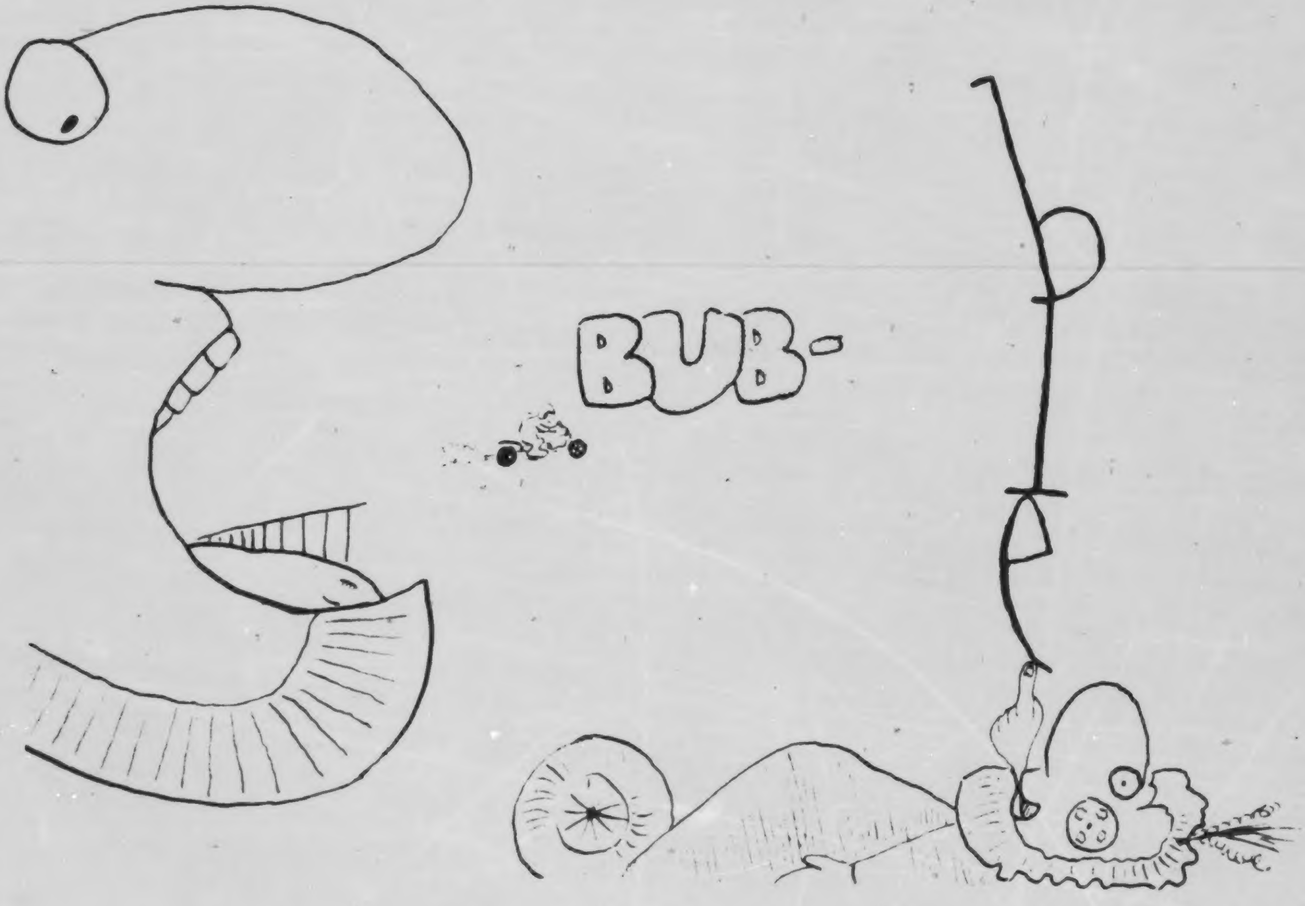
I know of an old man who studies sea life. He wakes up every morning before high tide and rushes to a certain spot on the ocean shore with his test tubes and bottles and carefully dips them into the water. Then he goes back to his home and thoughtfully looks at the sea life under his microscope. When the day is over he gathers his bottles and returns to the ocean -- to the exact spot where he dipped them -- and pours the little sea animals back into their home. Such a respect for the order and rhythm of the waters, and for the life it contains!

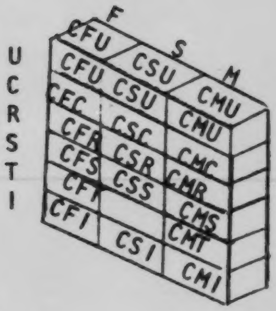


Certain words are friendly, others are mean. Some are happy and others are sad. A good happy word is bubble. It b u b s and your mouth pops out. Your lazy tongue goes to sleep while your face jumps. Then b u l l, your cheeks get a flat tire while your tongue stretches out its hand to catch the breeze -- b u b b b u l l l .

Or say the word rock. Now there's a hard-boiled word -- r r r r o c k, a round o c k. When it rolls or flies, you say, "How graceful! How r r r r i s h!" But there's always an o c k waiting for you -- and you'd better be ready.

A stone is so much different that a rock. It s t t t a h h s, then o n n n e s s ! First a hissing point, then mellow nervousness or humming, like an arrowhead, or a flat flint that chips and skips along a quiet pond -- s t o o h h n n n n ! There's a gentle promise there, if only you're friendly with the sound!

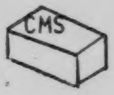




Concept Cognition

Curricular Objective

1.6 The student will use descriptive words orally to communicate to other students the way to draw a given shape.



Input

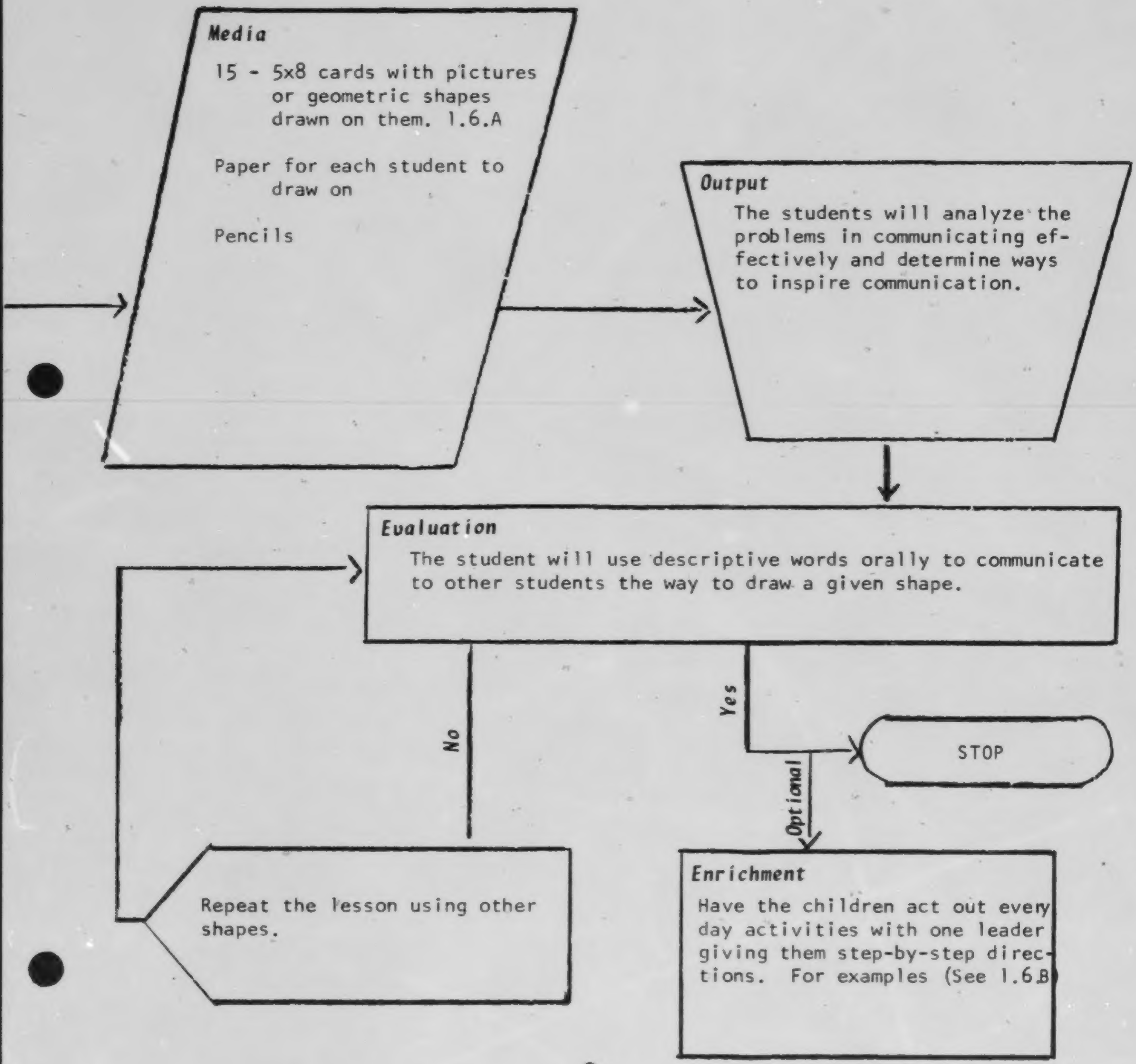
Discuss the effectiveness of using words to communicate ideas.

Discuss how the words used in giving directions influences the behavior of other people.

1. Relate this to finding a certain location after receiving directions as to how to get there.

Learning Opportunities

I. Discuss how to give directions well so that others understand.
  A. Discuss organization of thoughts and how to develop a sequence to the directions.
II. Divide the class into groups of five.
  A. Each child in the group will have an opportunity to give directions to the other children in that group.
  B. The child who will be giving directions receives a 5x8 card with a picture or geometric shape drawn on it. (See: 1.6.A.)
    1. Without showing the rest of the group he will use only words to explain how to draw the shape.
    2. He may use only words telling the types of lines to use, the direction the line is to go, and the length of distance of the lines and between them.
  C. The other members of the group draw exactly what they are told.
    1. No questions may be asked of the direction-giver.
  D. At the end the group compares their drawings to the original.
  E. Another student then gives directions from another card until each child has a turn.
III. Discuss the problems in communication effectively and how to remedy them.



Media

15 - 5x8 cards with pictures or geometric shapes drawn on them. 1.6.A

Paper for each student to draw on

Pencils

Output

The students will analyze the problems in communicating effectively and determine ways to inspire communication.

Evaluation

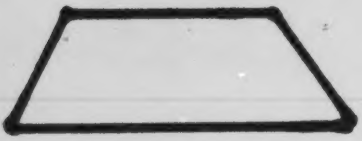
The student will use descriptive words orally to communicate to other students the way to draw a given shape.

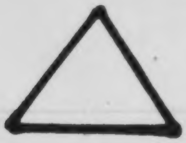
Repeat the lesson using other shapes.

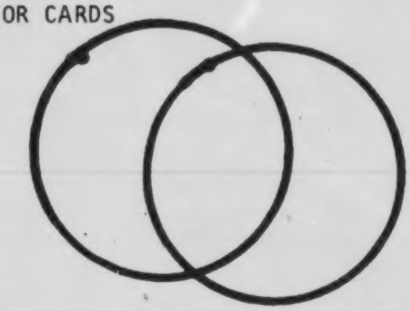
Enrichment

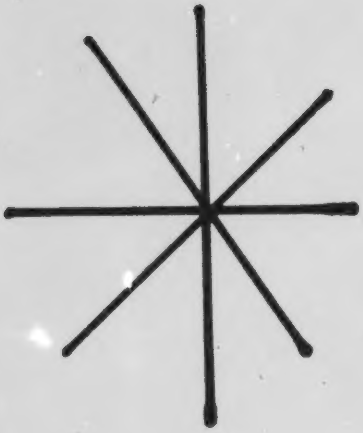
Have the children act out every day activities with one leader giving them step-by-step directions. For examples (See 1.6.B)

SUGGESTED FORMS FOR CARDS









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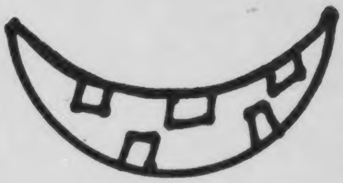

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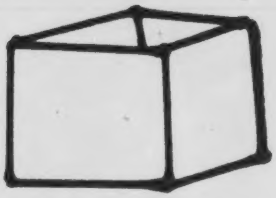
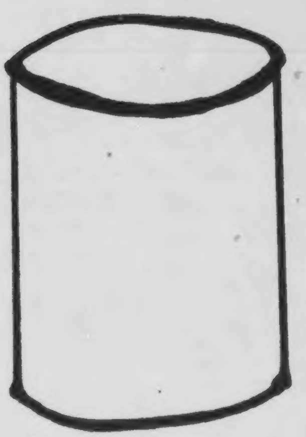
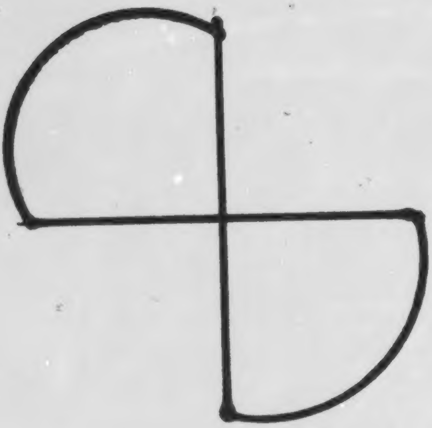
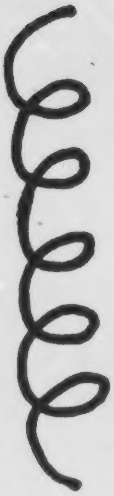
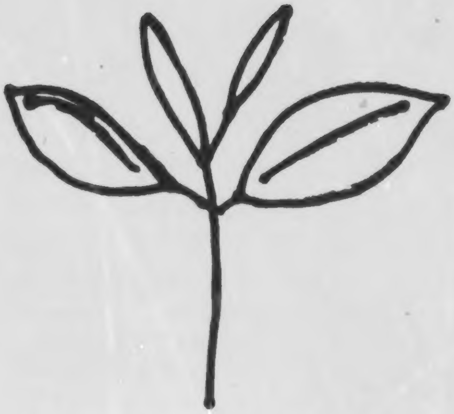




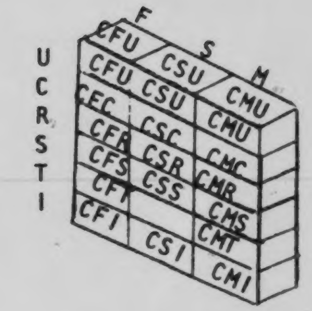






SUGGESTED ACTIVITIES TO ACT OUT ACCORDING TO ORAL DIRECTIONS

1. How to tie a shoe.
2. How to make a salami sandwich.
3. How to brush your teeth.
4. How to run a washing machine.
5. How to add (multiply, divide, subtract) a given problem.



Concept Cognition

Curricular Objective

1.7 The student will demonstrate his ability to recognize the ambiguity of words by determining the many meanings of a simple word.

Input

Discuss how we use words to communicate - the purpose of words.

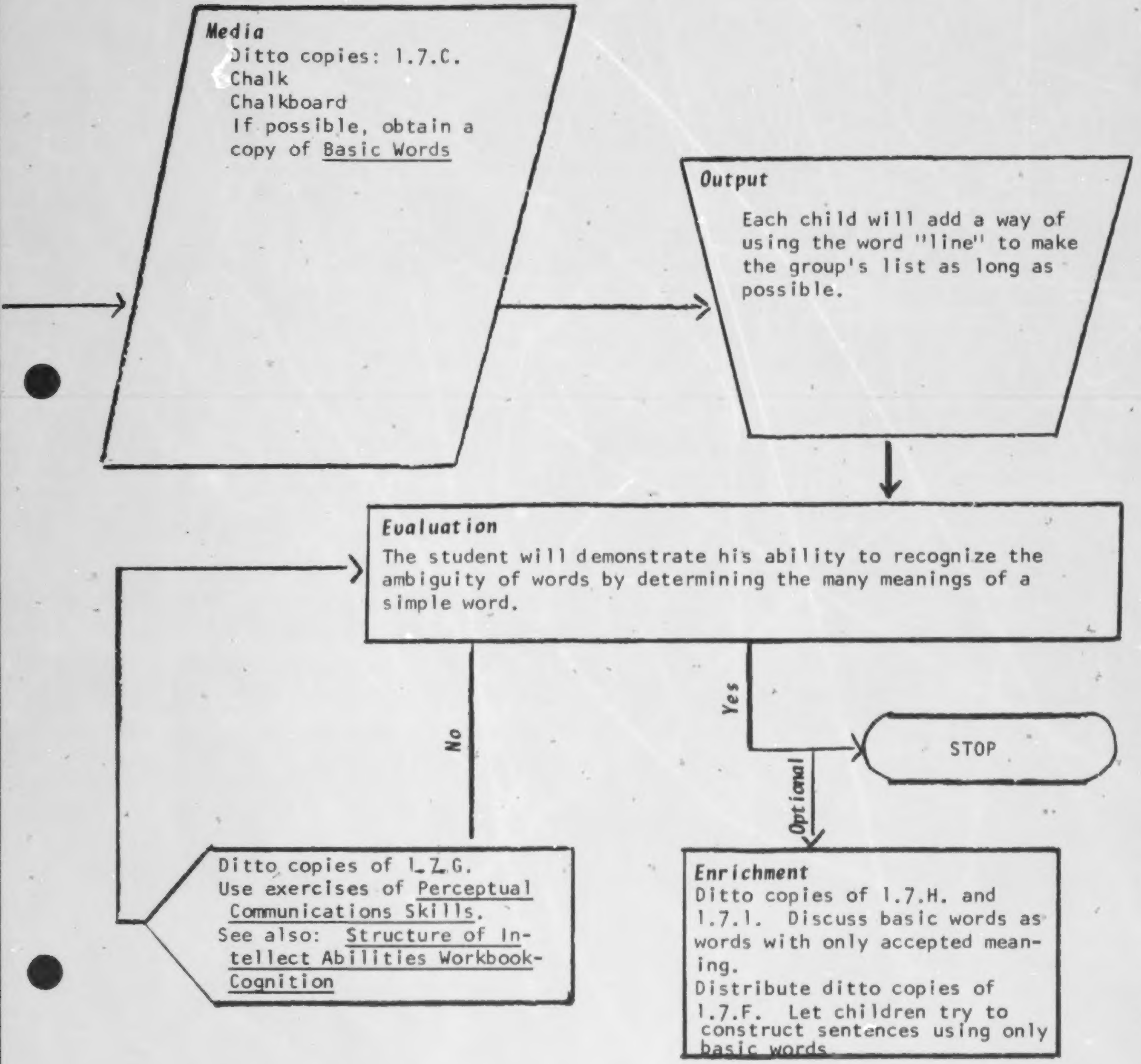
Discuss why our words are sometimes misunderstood (See: 1.7.A.)

Discuss the many meanings of some words. (See: 1.7.B.) The children match the uses of the word plant with its proper meaning. (See: 1.7.C.)

Learning Opportunities

I. Discuss why some of our words have so many meanings.
   A. Have the children tell what the word "lead" means.
   B. Then show them the meanings of "lead" and discuss how this makes communication difficult. (See: 1.7.D.)

II. Put the word "line" on the board and have the children think of all the ways it is used. (See: 1.7.E.)
   A. Tally each different use of the word on the board.
   B. After twenty minutes add up the score.
   C. Discuss why the context of the sentence is important to communicating effectively.



Media

Ditto copies: 1.7.C.
Chalk
Chalkboard
If possible, obtain a copy of Basic Words

Output

Each child will add a way of using the word "line" to make the group's list as long as possible.

Evaluation

The student will demonstrate his ability to recognize the ambiguity of words by determining the many meanings of a simple word.

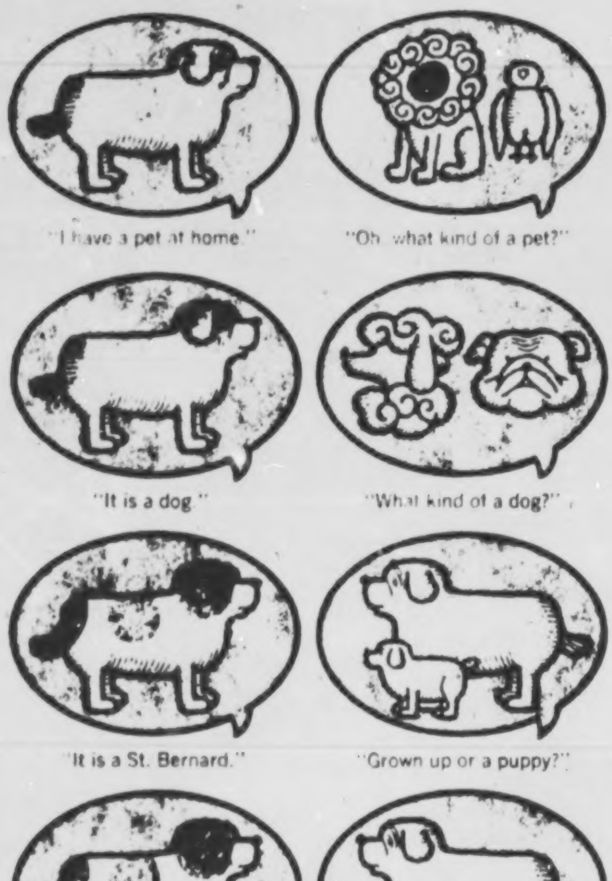
Ditto copies of 1.7.G.
Use exercises of Perceptual Communications Skills.
See also: Structure of Intellect Abilities Workbook-Cognition

Enrichment

Ditto copies of 1.7.H. and 1.7.I. Discuss basic words as words with only accepted meaning.
Distribute ditto copies of 1.7.F. Let children try to construct sentences using only basic words.

Word Power in Conversations

Well, why didn't you say so?


"I have a pet at home."
"Oh, what kind of a pet?"
"It is a dog."
"What kind of a dog?"
"It is a St. Bernard."
"Grown up or a puppy?"
"It is full grown."
"What color is it?"
"It is brown and white."
"Why didn't you say you had a full grown, brown and white St. Bernard as a pet in the first place?"
"Why doesn't anybody understand me?"

Being specific in your use of words can help you to get the things you want. Suppose you want your dad to buy a Christmas tree. In your mind you have a picture of just the kind you want. You may want a real tree. But do you want a Scotch pine, a Douglas fir, or a balsam fir? They look quite different. Or perhaps you prefer a plastic, cardboard, or aluminum tree.

The point is, you probably will not get the kind you want unless you know the exact word for it or are able to give a full and accurate description of it. The more words you can handle well, the more likely you are to get exactly what you want.

Remember that many words can be used in more than one way. *Tree* can mean "to corner and put in a difficult position." *Pine* can mean "to yearn after, waste away with grief." Be aware of the different meanings a word can have. Choose the ones that say best what you mean. Words can be fun.

I pine fir yew and balsam, too.

What a strange-looking sentence. But if you say it out loud, you begin to see the play on words. Then you could write it so that it said what it *sounded* as though it was saying. If you did, how would it look? Only one of the original four trees (pine, fir, yew, and balsam) retains its same spelling in the new sentence.

Can you think of any more plays on words? How about T-shirt. If you spelled it "tea-shirt," it would be a shirt you wore to a tea, wouldn't it? You may have used the expression "Long time no see" when you met someone you hadn't seen for a long time. A play on the words of that expression is the joke about the sailor who had been on land for months. When someone asked him what he had been doing, he said, "Long time no sea."

To have fun with writing, and to get across your ideas and feelings, try to create pictures with words. Don't be afraid to use your imagination. Sometimes the best way to express how a thing looks, or how you feel about it, is to compare it to something else.

From Kaiser Aluminum News, Kaiser Aluminum & Chemical Corporation. Oakland 1968.

NOT ONE SENSE -- BUT MANY SENSES

Symbols, or words, have no meanings in themselves. They have meanings only because they have been given meanings by people.

Sometimes we have the idea that a word has a meaning. Most often a word has several meanings. If you look in your dictionary you will see that this is true.

Pick a page in your dictionary. Count the entry words on the page.

There are ______ entry words. How many words have more than one meaning?

_______ How many words have only one meaning? _______ There will be several

meanings for most of the words. The word on this page which has the most

meanings is ______________________. How many meanings does it have?__________

* * * * * * * * * * * * * * * * * * * *

It is important, if we are going to communicate properly with people, that we know which meaning of the word they are using when they speak. Here is an illustration of this idea. Suppose you were to hear someone talking to a friend about something he has done the day before. His conversation goes something like this.

> "I saw a plant yesterday. It was a green plant. It was a very large plant. The plant spread over several acres of land. Inside the plant many men were working. The plant manufactured automobiles."

At first we do not know exactly what he is talking about. Perhaps we think of a plant growing out of the ground with flowers on it. After we listen though, we soon realize that he is not talking about this kind of a plant.

What is one good way to decide the meaning of a word that a person is using?

____

____

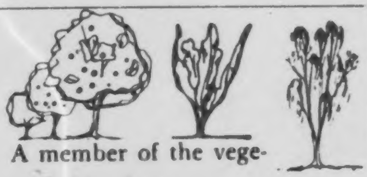
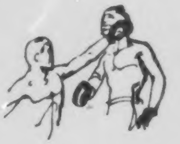
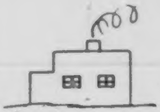
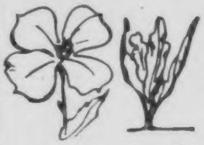
____

____

From Semantics by Peggy Fretz, East Whittier City School District, Whittier, Calif.

1.7.C.

33. Match each use of the word *plant* with the proper meaning, at right.

Both sides of the river were dense with *plants* and trees.	A	a	 A member of the vegetable kingdom.
He could not *plant* a blow squarely.	B	b	 To place or land, as a blow.
"Persecution is a bad and indirect way to *plant* religion." Sir Thomas Browne, *Religio Medici*	C	c	 The buildings, land, apparatus, etc., of an industrial firm.
Some plankton are animals, others are *plants*.	D	d	 A soft-stemmed member of the vegetable kingdom, as opposed to a shrub or tree.
The *plant* is worth much more than the inventory.	E	e	To establish, found, settle, inculcate, as a colony or an idea.

There are about 298 million English speaking people alive in the world today.

To some extent, their individual experiences differ from all others. Every fraction of a second in their lives, they are experiencing something that is not exactly like any experience they have had before, or that anyone else has had.

Yet they have the same meager store of accepted symbols to use in reporting to each other what they have experienced.

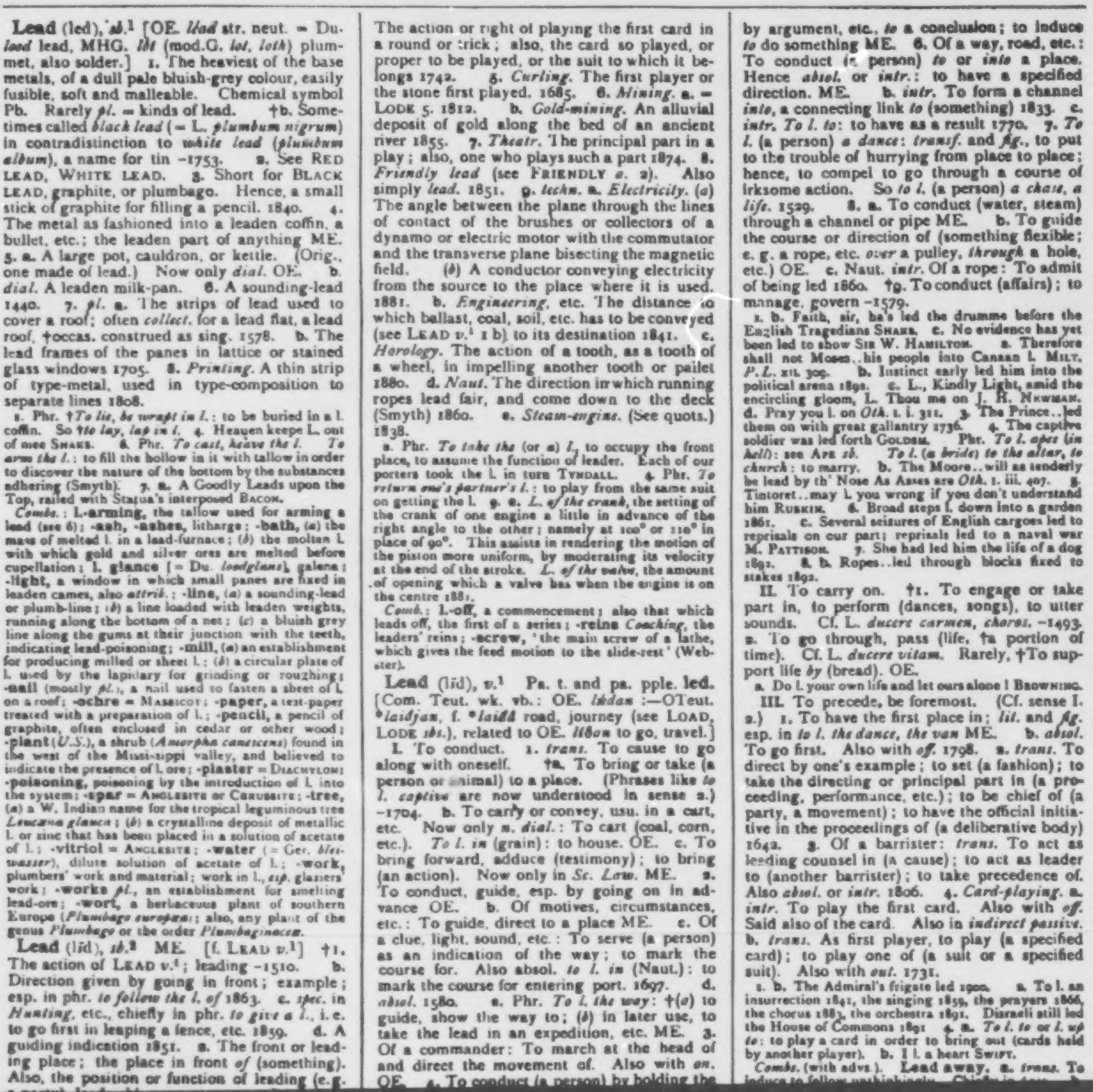
Each common word/symbol must, therefore, necessarily be used to cover a wide range of "meanings."

Let us look at one common word—perhaps you have used it once or more today—and see what a dictionary says it "means." Having glanced at what the Shorter Oxford Dictionary has to say about the "meaning" of LEAD—can you write down here the "real meaning" of the word?

"________________________________"

Of course you can't.

(A dictionary does not tell us what common words "mean." A dictionary is a history of how a word has been used most frequently in some contexts and at different times. A dictionary indicates various areas of meaning, at various periods of time.)



Lead (led), *sb.*¹ [OE. *lēad* str. neut. = Du. *lood* lead, MHG. *lôt* (mod.G. *lot, loth*) plummet, also solder.] 1. The heaviest of the base metals, of a dull pale bluish-grey colour, easily fusible, soft and malleable. Chemical symbol Pb. Rarely *pl.* = kinds of lead. †b. Sometimes called *black lead* (= L. *plumbum nigrum*) in contradistinction to *white lead* (*plumbum album*), a name for tin –1753. 2. See RED LEAD, WHITE LEAD. 3. Short for BLACK LEAD, graphite, or plumbago. Hence, a small stick of graphite for filling a pencil. 1840. 4. The metal as fashioned into a leaden coffin, a bullet, etc.; the leaden part of anything ME. 5. a. A large pot, cauldron, or kettle. (Orig., one made of lead.) Now only *dial.* OE. b. *dial.* A leaden milk-pan. 6. A sounding-lead 1440. 7. *pl.* a. The strips of lead used to cover a roof; often *collect.* for a lead flat, a lead roof, †occas. construed as sing. 1578. b. The lead frames of the panes in lattice or stained glass windows 1705. 8. *Printing.* A thin strip of type-metal, used in type-composition to separate lines 1808.

1. Phr. †*To lie, be wrapt in l.*: to be buried in a l. coffin. So †*to lay, lap in l.* 4. Heauen keepe L. out of mee SHAKS. 6. Phr. *To cast, heave the l.* *To arm the l.*: to fill the hollow in it with tallow in order to discover the nature of the bottom by the substances adhering (Smyth). 7. a. A Goodly Leads upon the Top, railed with Statua's interposed BACON.

Combs.: **l.-arming**, the tallow used for arming a lead (see 6); **-ash, -ashes**, litharge; **-bath**, (*a*) the mass of melted l. in a lead-furnace; (*b*) the molten l. with which gold and silver ores are melted before cupellation; **l. glance** (= Du. *loodglans*), galena; **-light**, a window in which small panes are fixed in leaden cames, also *attrib.*; **-line**, (*a*) a sounding-lead or plumb-line; (*b*) a line loaded with leaden weights, running along the bottom of a net; (*c*) a bluish grey line along the gums at their junction with the teeth, indicating lead-poisoning; **-mill**, (*a*) an establishment for producing milled or sheet l.; (*b*) a circular plate of l. used by the lapidary for grinding or roughing; **-nail** (mostly *pl.*), a nail used to fasten a sheet of l. on a roof; **-ochre** = MASSICOT; **-paper**, a test-paper treated with a preparation of l.; **-pencil**, a pencil of graphite, often enclosed in cedar or other wood; **-plant** (*U.S.*), a shrub (*Amorpha canescens*) found in the west of the Missi-ssippi valley, and believed to indicate the presence of l. ore; **-plaster** = DIACHYLON; **-poisoning**, poisoning by the introduction of l. into the system; **-spar** = ANGLESITE or CERUSSITE; **-tree**, (*a*) a W. Indian name for the tropical leguminous tree *Leucæna glauca*; (*b*) a crystalline deposit of metallic l. or zinc that has been placed in a solution of acetate of l.; **-vitriol** = ANGLESITE; **-water** (= Ger. *bleiwasser*), dilute solution of acetate of l.; **-work**, plumbers' work and material; work in l., *esp.* glaziers' work; **-works** *pl.*, an establishment for smelting lead-ore; **-wort**, a herbaceous plant of southern Europe (*Plumbago europæa*); also, any plant of the genus *Plumbago* or the order *Plumbaginaceæ*.

Lead (līd), *sb.*² ME. [f. LEAD *v.*¹] †1. The action of LEAD *v.*¹; leading –1510. b. Direction given by going in front; example; esp. in phr. *to follow the l. of* 1863. c. *spec.* in *Hunting*, etc., chiefly in phr. *to give a l.*, i.e. to go first in leaping a fence, etc. 1859. d. A guiding indication 1851. 2. The front or leading place; the place in front *of* (something). Also, the position or function of leading (e.g.

The action or right of playing the first card in a round or trick; also, the card so played, or proper to be played, or the suit to which it belongs 1742. 5. *Curling.* The first player or the stone first played. 1685. 6. *Mining.* a. = LODE 5. 1812. b. *Gold-mining.* An alluvial deposit of gold along the bed of an ancient river 1855. 7. *Theatr.* The principal part in a play; also, one who plays such a part 1874. 8. *Friendly lead* (see FRIENDLY *a.* 2). Also simply *lead.* 1851. 9. *techn.* a. *Electricity.* (*a*) The angle between the plane through the lines of contact of the brushes or collectors of a dynamo or electric motor with the commutator and the transverse plane bisecting the magnetic field. (*b*) A conductor conveying electricity from the source to the place where it is used. 1881. b. *Engineering*, etc. The distance to which ballast, coal, soil, etc. has to be conveyed (see LEAD *v.*¹ 1 b) to its destination 1841. c. *Horology.* The action of a tooth, as a tooth of a wheel, in impelling another tooth or pallet 1880. d. *Naut.* The direction in which running ropes lead fair, and come down to the deck (Smyth) 1860. e. *Steam-engine.* (See quots.) 1838.

2. Phr. *To take the* (or *a*) *l.*, to occupy the front place, to assume the function of leader. Each of our porters took the l. in turn TYNDALL. 4. Phr. *To return one's partner's l.*: to play from the same suit on getting the l. 9. e. *L. of the crank*, the setting of the crank of one engine a little in advance of the right angle to the other; namely at 100° or 110° in place of 90°. This assists in rendering the motion of the piston more uniform, by moderating its velocity at the end of the stroke. *L. of the valve*, the amount of opening which a valve has when the engine is on the centre 1881.

Comb.: **l.-off**, a commencement; also that which leads off, the first of a series; **-reins** *Coaching*, the leaders' reins; **-screw**, 'the main screw of a lathe, which gives the feed motion to the slide-rest' (Webster).

Lead (līd), *v.*¹ Pa. t. and pa. pple. **led.** [Com. Teut. wk. vb.: OE. *lǣdan* :—OTeut. **laidjan*, f. **laidā* road, journey (see LOAD, LODE *sbs.*), related to OE. *līðan* to go, travel.]

I. To conduct. 1. *trans.* To cause to go along with oneself. †a. To bring or take (a person or animal) to a place. (Phrases like *to l. captive* are now understood in sense 2.) –1704. b. To carry or convey, usu. in a cart, etc. Now only *n. dial.*: To cart (coal, corn, etc.). *To l. in* (grain): to house. OE. c. To bring forward, adduce (testimony); to bring (an action). Now only in *Sc. Law.* ME. 2. To conduct, guide, esp. by going on in advance OE. b. Of motives, circumstances, etc.: To guide, direct to a place ME. c. Of a clue, light, sound, etc.: To serve (a person) as an indication of the way; to mark the course for. Also absol. *to l. in* (Naut.): to mark the course for entering port. 1697. d. *absol.* 1580. e. Phr. *To l. the way*: †(*a*) to guide, show the way to; (*b*) in later use, to take the lead in an expedition, etc. ME. 3. Of a commander: To march at the head of and direct the movement of. Also with *on*. OE. 4. To conduct (a person) by holding the

by argument, etc., *to* a conclusion; to induce *to* do something ME. 6. Of a way, road, etc.: To conduct (a person) *to* or *into* a place. Hence *absol.* or *intr.*: to have a specified direction. ME. b. *intr.* To form a channel *into*, a connecting link *to* (something) 1833. c. *intr. To l. to*: to have as a result 1770. 7. *To l.* (a person) *a dance*: *transf.* and *fig.*, to put to the trouble of hurrying from place to place; hence, to compel to go through a course of irksome action. So *to l.* (a person) *a chase, a life*. 1529. 8. a. To conduct (water, steam) through a channel or pipe ME. b. To guide the course or direction of (something flexible; e. g. a rope, etc. *over* a pulley, *through* a hole, etc.) OE. c. Naut. *intr.* Of a rope: To admit of being led 1860. †9. To conduct (affairs); to manage, govern –1579.

1. b. Faith, sir, he's led the drumme before the English Tragedians SHAKS. c. No evidence has yet been led to show SIR W. HAMILTON. 2. Therefore shall not Moses..his people into Canaan l. MILT. *P.L.* xii. 309. b. Instinct early led him into the political arena 1892. c. L., Kindly Light, amid the encircling gloom, L. Thou me on J. H. NEWMAN. d. Pray you l. on *Oth.* i. i. 311. 3. The Prince..led them on with great gallantry 1736. 4. The captive soldier was led forth GOLDSM. Phr. *To l. apes* (*in hell*): see APE *sb.* *To l.* (*a bride*) *to the altar, to church*: to marry. b. The Moore..will as tenderly be lead by th' Nose As Asses are *Oth.* i. iii. 407. 5. Tintoret..may l. you wrong if you don't understand him RUSKIN. 6. Broad steps l. down into a garden 1861. c. Several seizures of English cargoes led to reprisals on our part; reprisals led to a naval war M. PATTISON. 7. She had led him the life of a dog 1892. 8. b. Ropes..led through blocks fixed to stakes 1892.

II. To carry on. †1. To engage or take part in, to perform (dances, songs), to utter sounds. Cf. L. *ducere carmen, choros.* –1493. 2. To go through, pass (life, †a portion of time). Cf. L. *ducere vitam.* Rarely, †To support life *by* (bread). OE.

2. Do l. your own life and let ours alone! BROWNING.

III. To precede, be foremost. (Cf. sense I. 2.) 1. To have the first place in; *lit.* and *fig.* esp. in *to l. the dance, the van* ME. b. *absol.* To go first. Also with *off*. 1798. 2. *trans.* To direct by one's example; to set (a fashion); to take the directing or principal part in (a proceeding, performance, etc.); to be chief of (a party, a movement); to have the official initiative in the proceedings of (a deliberative body) 1642. 3. Of a barrister: *trans.* To act as leading counsel in (a cause); to act as leader to (another barrister); to take precedence of. Also *absol.* or *intr.* 1806. 4. *Card-playing.* a. *intr.* To play the first card. Also with *off*. Said also of the card. Also in *indirect passive*. b. *trans.* As first player, to play (a specified card); to play one of (a suit or a specified suit). Also with *out*. 1731.

1. b. The Admiral's frigate led 1900. 2. To l. an insurrection 1841, the singing 1859, the prayers 1866, the chorus 1883, the orchestra 1891. Disraeli still led the House of Commons 1891 4. a. *To l. to* or *l. up to*: to play a card in order to bring out (cards held by another player). b. I l. a heart SWIFT.

Combs. (with advs.). **Lead away.** a. *trans.* To

EXAMPLES OF USES FOR "LINE"

Drop me a line

Line the walk with flowers

A line of work

Timber line

Foul line

Lifeline

Hemline

Equator line

Airlines

Party line

USING THE BASIC WORDS LIST

I. The words listed on the following pages have been included because they have only one accepted meaning.

II. They are classified for easy reference in the following ways:

   A. Operations, etc.
      1. The first section contains verbs and helpers.
      2. The rest of the operations contain words that limit or direct a phrase or idea.

   B. Things
      1. These words are nouns with basic meanings.

   C. Qualities
      1. These words specify a state of being or a characteristic.

III. Rules for changing these basic words are on the third sheet.

1.7.F.

BASIC ENGLISH

Courtesy of Sue Gregg - from Ogden's book

OPERATIONS, ETC.

come
get
give
go
keep
let
make
put
seem
take
be
do
have
say
see
send
may
will

about
across
after
against
among
at
before
between
by
down
from
in
off
on
over
through
to
under
up
with
as
for
of
till
than
a
the
all
any
every
no
other
some
little
much

quite
so
very
tomorrow
yesterday
North
South
East
West
please
yes
such
that
this
I
he
you
who
and
because
but
or
if
though
while
how
when
where
why
again
ever
far
forward
here
near
now
out
still
then
there
together
well
almost
enough
even
not
only

THINGS

account
act
addition
adjustment
advertisement
agreement
air
amount
amusement
animal
answer
apparatus
approval
argument
art
attack
attempt
attention
attraction
authority
back
balance
base
behavior
belief
birth
bit
bite
blood
blow
body
brass
bread
breath
brother
building
burn
burst
business
butter
canvas
care
cause
chalk
chance
change
cloth
coal
color
comfort
committee
company
comparison
competition

condition
connection
control
cook
copper
copy
cork
cotton
cough
country
cover
crack
credit
crime
crush
cry
current
curve
damage
danger
daughter
day
death
debt
decision
degree
design
desire
destruction
detail
development
digestion
direction
discovery
discussion
disease
disgust
distance
distribution
division
doubt
drink
driving
dust
earth
edge
education
effect
end
error
event
example
exchange
existence
expansion

experience
expert
fact
fall
family
father
fear
feeling
fiction
field
fight
fire
flame
flight
flower
fold
food
force
form
friend
front
fruit
glass
gold
government
grain
grass
grip
group
growth
guide
harbor
harmony
hate
hearing
heat
help
history
hole
hope
hour
humor
ice
idea
impulse
increase
industry
ink
insect
instrument
insurance
interest
invention
iron

jelly
join
journey
judge
jump
kick
kiss
knowledge
land
language
laugh
law
lead
learning
leather
letter
level
lift
light
limit
linen
liquid
list
look
loss
love
machine
man
manager
mark
market
mass
meal
measure
meat
meeting
memory
metal
middle
milk
mind
mine
minute
mist
money
month
morning
mother
motion
mountain
move
music
name
nation
need

news
night
noise
note
number
observation
offer
oil
operation
opinion
order
organization
ornament
owner
page
pain
paint
paper
part
paste
payment
peace
person
place
plant
play
pleasure
point
poison
polish
porter
position
powder
power
price
print
process
produce
profit
property
prose
protest
pull
punishment
purpose
push
quality
question
rain
range
rate
ray
reaction
reading
reason
record

THINGS

regret
relation
eligion
representative
request
respect
rest
reward
rhythm
rice
river
road
roll
room
rub
rule
run
salt
sand
scale
science
sea
seat
secretary
selection
self
sense
ervant
sex
shade
shake
shame
shock
side
sign
silk
silver
sister
size
sky
sleep
slip
slope
smash
smell
smile
smoke
sneeze
snow
soap
society
son
song
ort

sound
soup
space
stage
start
statement
steam
steel
step
stitch
stone
stop
story
stretch
structure
substance
sugar
suggestion
summer
support
surprise
swim
system
talk
taste
tax
teaching
tendency
test
theory
thing
thought
thunder
time
tin
top
touch
trade
transport
trick
trouble
turn
twist
unit
use
value
verse
vessel
view
voice
walk
war
wash
waste
water

wave
wax
way
weather
week
weight
wind
wine
winter
woman
wood
wool
word
work
wound
writing
year

angle
ant
apple
arch
arm
army
baby
bag
ball
band
basin
basket
bath
bed
bee
bell
berry
bird
blade
board
boat
bone
book
boot
bottle
box
boy
brain
brake
branch
brick
bridge
brush
bucket
bulb
button

cake
camera
card
carriage
cart
cat
chain
cheese
chest
chin
church
circle
clock
cloud
coat
collar
comb
cord
cow
cup
curtain
cushion
dog
door
drain
drawer
dress
drop
ear
egg
engine
eye
face
farm
feather
finger
fish
flag
floor
fly
foot
fork
fowl
frame
garden
girl
glove
goat
gun
hair
hammer
hand
hat
head
heart
hook

horn
horse
hospital
house
island
jewel
kettle
key
knee
knife
knot
leaf
leg
library
line
lip
lock
map
match
monkey
moon
mouth
muscle
nail
neck
needle
nerve
net
nose
nut
office
orange
oven
parcel
pen
pencil
picture
pig
pin
pipe
plane
plate
plough
pocket
pot
potato
prison
pump
rail
rat
receipt
ring
rod
roof
root
sail
school
scissors
screw
seed

sheep
shelf
ship
shirt
shoe
skin
skirt
snake
sock
spade
sponge
spoon
spring
square
stamp
star
station
stem
stick
stocking
stomach
store
street
sun
table
tail
thread
throat
thumb
ticket
toe
tongue
tooth
town
train
tray
tree
trousers
umbrella
wall
watch
wheel
whip
whistle
window
wing
wire
worm

BASIC ENGLISH

QUALITIES

able
acid
angry
automatic
beautiful
black
boiling
bright
broken
brown
cheap
chemical
chief
clean
clear
common
complex
conscious
cut
deep
dependent
early
elastic
electric
equal
fat
fertile
first
fixed
flat
free
frequent
full
general
good
great
grey
hanging
happy
hard
healthy
high
hollow
important
kind
like
living
long
make
married
material
medical
military
natural
necessary
new
normal
open
parallel
past
physical
political
poor
possible
present
private
probable
quick
quiet
ready
red
regular
responsible
right
round
same
second
separate
serious
sharp
smooth
sticky
stiff
straight
strong
sudden
sweet
tall
thick
tight
tired
true
violent
waiting
warm
wet
wide
wise
yellow
young
awake
bad
bent
bitter
blue
certain
cold
complete
cruel
dark
dead
dear
delicate
different
dirty
dry
false
feeble
female
foolish
future
green
ill
last
late
left
loose
loud
low
mixed
narrow
old
opposite
public
rough
sad
safe
secret
short
shut
simple
slow
small
soft
solid
special
strange
thin
white
wrong

RULES

Addition of 's' to things when there is more than one.

Endings in 'er,' 'ing,' 'ed,' from 300 names of things.

'Ly' forms from qualities

Degree with 'more' and 'most'

Questions by change of order, and 'do'

There are no other verbs besides the operations listed.

1.7.G.

Most words have several different meanings. The word set for example has over 200 recorded meanings. Other words with several meanings are light, sound, plant, sharp, and play. You can think of many more yourself. You can find many more if you look in the dictionary.

In each of the following exercises, match the definition with the correct sentence. Write the letter of the meaning in front of the sentence which illustrates that meaning.

address

1. a speech, either spoken or written
2. speak to or write to
3. the place to which mail is directed
4. write on an envelope or package where it is to be sent
5. apply (oneself)

______When you address an older man you should call him Sir.

______Will you address this letter for me?

______Please address yourself to your arithmetic.

______My address is 213 South Circle Drive.

______The President gave an address to the people of the nation.

jar

1. shake; rattle
2. have a harsh, unpleasant effect on; send a shock through your ears, feelings, nerves, etc.
3. A deep container made of earthenware, stone, or glass, with a wide mouth
4. clash; quarrel

______Their ideas always jarred.

______He put the leftover food in a jar.

______The sonic boom jarred the house.

______The screames of the boy jarred my nerves.

quiet

1. making no sound, with little or no noise
2. still; moving very little
3. at rest; not busy
4. gentle; not offending others
5. not showy or bright

______Blue is a quiet color.

______She is such a quiet girl.

______The boys and girls were quiet while they worked.

______They spent a quiet evening at home.

______The lake is very quiet.

From Semantics by Peggy Fretz, East Whittier City School District, Whittier, Calif.

WORD SENSES

Sometimes words get new senses. New senses may be added to words. An object may resemble something familiar to us. It may look something like a familiar object. It may have the same function, or use, as a familiar object. Often we call it by the name of the thing it resembles.

Did you ever cup your hands to get a drink? When you cup your hands you

make them resemble a ____.

We plant bulbs in the ground. What kind of a bulb do we use in the house

that resembles a flower bulb? ____________________________________.

A bird has a wing. What else can you think of that has a wing?

____

____

These things were given the name wing because they resemble the wing of a bird.

Have you ever seen an arrow which points out a direction? This was given

its name because it resembles an _______________________________

shot from a bow.

Animals have tails. Can you think of other things which have tails?

____

____

These things were given their names because they resemble the tails of animals.

You wear a coat to protect yourself from the weather. What else wears a

coat for protection?

____

____

From Semantics by Peggy Fretz, East Whittier City School District, Whittier, Calif.

THINGS ARE SELDOM WHAT THEY SEEM

Can you name these?

1. A tree that isn't a tree ________________
2. A bird that isn't a bird ________________
3. An island that isn't an island ________________
4. A ball that isn't a ball ________________
5. A horse that isn't a horse ________________
6. Lace that isn't lace ________________
7. A bow that isn't a bow ________________

TRIPLE MEANINGS

Each triple definition below stands for a three letter word.
The answer to the first one is CUE.
Can you find the others?

1. Gratuity, extremity, advance information ________________
2. Tooth holder, rubber overshoe, chicle ________________
3. Son of Noah, kind of meat, bad actor ________________
4. Acting signal, billiard stick, pigtail ________________
5. Dance, air trip, beer-flavoring plant ________________
6. Line, boat ride, brawl ________________
7. Harbor obstruction, drinking place, lever ________________
8. Jail, quill, sty ________________
9. Pinch, cheese tang, small drink ________________
10. Door opener, piano lever, Florida reef ________________
11. Greek god, metal dish, hard subsoil ________________
12. Clothes fastener, bowling target, leg ________________
13. Attitude, atmosphere, song ________________
14. Joke, speech restrainer, fish ________________
15. Ball club, spree, winged mammal ________________
16. Haircut, pendulum weight, shilling ________________
17. Cravat, draw, railroad timber ________________

ANSWER SHEET

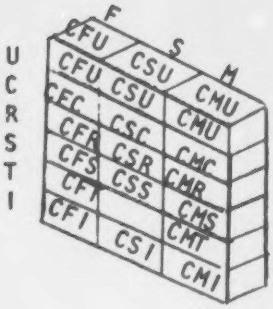
THINGS ARE SELDOM WHAT THEY SEEM

Can you name these?

1. Shoe (or boot) tree
2. Lady bird (or badminton bird)
3. Rhode Island
4. Hiball
5. Saw horse
6. Shoelace
7. Rainbow

Triple Meanings

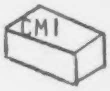
1. Tip
2. Gum
3. Ham
4. Cue
5. Hop
6. Row
7. Bar
8. Pen
9. Nip
10. Key
11. Pan
12. Pin
13. Air
14. Gag
15. Bat
16. Bob
17. Tie



Concept Cognition

Curricular Objective

1.8 The student will demonstrate an understanding of the importance of using basic words by interpreting stories written in ambiguous terms.



Input

Given a story written in ambiguous words the child will determine the meaning of the story. (See: 1.8.A.)

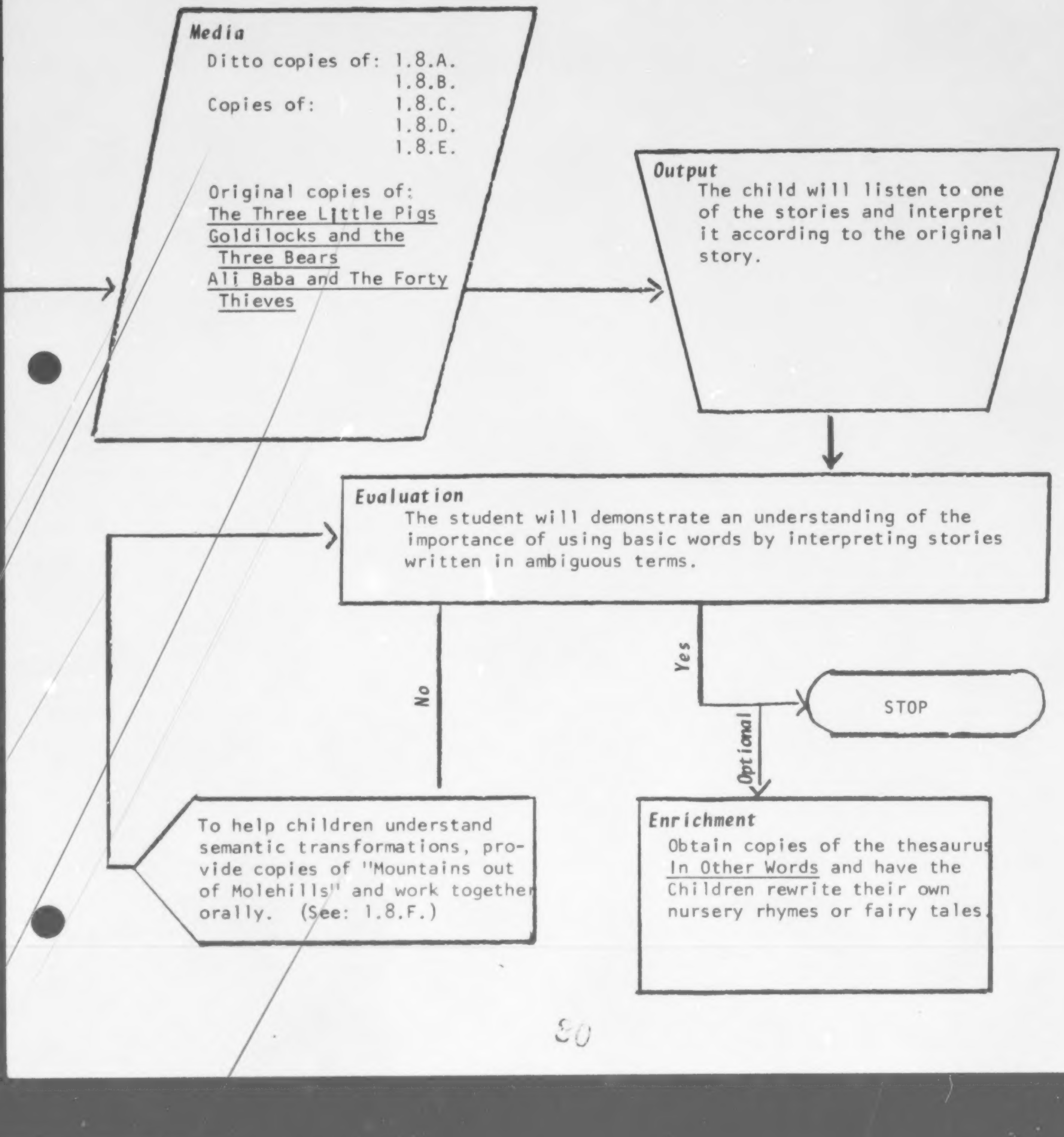
Given a riddle orally the student will determine the object described. (See: 1.8.B.)

Learning Opportunities

I. Discuss with the children how they feel when they hear "big" words.
   A. Determine how these words affect your thinking ability.

II. Read aloud portions of the three "transmogrified" stories by Charles Brown. (See: 1.8.C., 1.8.D., 1.8.E.)
   A. The children try to determine what story each represents.
   B. Analyze the title with the children and those parts of the story that give clues to its identity.

III. Place copies in your room so the children can read them and try to "translate" them to each other.
   A. It will help some children to have a copy of the original story to compare with this version.



Media

Ditto copies of: 1.8.A.
1.8.B.
Copies of: 1.8.C.
1.8.D.
1.8.E.

Original copies of:
The Three Little Pigs
Goldilocks and the Three Bears
Ali Baba and The Forty Thieves

Output

The child will listen to one of the stories and interpret it according to the original story.

Evaluation

The student will demonstrate an understanding of the importance of using basic words by interpreting stories written in ambiguous terms.

To help children understand semantic transformations, provide copies of "Mountains out of Molehills" and work togethe orally. (See: 1.8.F.)

Enrichment

Obtain copies of the thesauru In Other Words and have the Children rewrite their own nursery rhymes or fairy tales

1.8.A

MASTER OF ALL MASTERS

A girl once went to the fair to hire herself for a servant. At last, a funny-looking old gentleman engaged her, and took her home to his house. When she got there, he told her that he had something to teach her. In his house, he said, he had his own names for things.

He said to her, "What will you call me?"

"Master or mister, or whatever you please, sir," said she.

He said, "You must call me 'master of all masters.' And what would call this?" -- pointing to his bed.

"Bed or couch, or whatever you please, sir."

"No, that's my 'barnacle.' And what do you call these?" said he, pointing to his pantaloons.

"Breeches or trousers, or whatever you please, sir."

"You must call them 'squibs and crackers.' And what would you call her?" -- pointing to the cat.

"Cat or kit, or whatever you please, sir."

"You must call her 'white faced simminy.' And this now," showing the fire, "what would you call this?"

"Fire or flame, or whatever you please, sir."

"You must call it 'hot cockalorum,' and what this?" he went on, pointing to the water.

"Water or wet, or whatever you please, sir."

"No,'pondalorum' is its name. And what do you call this?" asked he as he pointed to the house.

"House or cottage, or whatever you please, sir."

"You must call it 'high topper mountain'."

That very night the servant woke her master up in a fright and said, "Master of all masters, get out of your barnacle, and put on' your squibs and crackers. For white-faced simminy has got a spark of hot cockalorum on its tail, and unless you get some pondalorum high topper mountain will be all on hot cockalorum." . . . That's all.

.....Joseph Jacobs

From Semantics by Peggy Fretz, East Whittier City School District, Whittier, Calif.

45 *Mrs. Windbag's Gift*

Professor Windbag likes to use big words and say everything in the most complicated way he can. When he handed a birthday present to his wife he said:

"My dear, here is a diminutive, aurum, truncated cone, convex on its summit and semiperforated with symmetrical indentations and a hollow interior."

Can you guess what is in the box?

A Golden Thimble

THE EPIC OF THE MINUTE PORCINE TRIPLETS

Transmogrified from an old manuscript*

by Charles M. Brown

An ancient female porker, lacking means sufficient for her triplet offspring, sent them forth in pursuit of material rewards. The initial departee soon encountered a high order anthropoid with a wrapped package of dry-stalky-plant-residue and bespoke himself thusly: "Prithee, milord, donate that dry-stalky-plant-residue unto your humble servant so that I may erect a domicile." Which the anthropoid did and the minute one erected his domicile.

Scarcely five hundred milliseconds later, a wild carnivore (Canis Lupus), a fur-iner in those parts, struck resounding blows on the central portal thereof. "Bantam porcus, bantam porcus, permit me within," cried he with undulating uvula.

Responded bantam porcus, "Not by the bristles of my scrawny jaw jaw."

Canis Lupus was facile with his rejoinder, "Then I'll exhale laboriously and exhale stertorously and bluster your domicile in, buster." So he exhaled laboriously and exhaled stertorously and blustered buster's domicile in and ingested, chewed, and swallowed the bantam porcus all up.

The second bantam porcus encountered a high order anthropoid with a wrapped package of leguminous shrub and bespoke himself thusly, "Prithee, milord, donate that package of leguminous shrub unto your humble servant so that I may erect a domicile." Which the anthropoid did and the minute one erected his domicile.

Transmogrified from an old manuscript*The Story of the Three Little Pigs
with permission from Charles M. Brown, PhD.

Scarcely measurable milliseconds later, Canis Lupus welcome-wagoned up. "Bantam porcus, bantam porcus, permit me within," cried he with undulating uvula.

Responded the bantam porcus, "Not by the bristle on my scrawny jaw jaw."

And the facile rejoinder remained the same, "Then I'll exhale laboriously and exhale stertorously and bluster your domicile in, buster." Which he did as before with the same consumptive consummation.

The third bantam porcus encountered an anthropoid with a shipping unit collection of compressed rectangular clay mass. "Prithee, milord," said the third bantam porcus, "donate that cargo of kiln dried elongated squares so that I may erect a domicile." Which the anthropoid did (as a tax write-off) and bantam porcus erected his domicile.

In less than a chronometer's careful tick, Canis Lupis was back with his rhetoric, "Bantam porcus, bantam porcus, permit me within."

"Not by the tuft below my sly grin."

And once more the facile surrejoinder was heard, "Then I'll exhale laboriously and exhale stertorously and bluster your domicile in, buster."

"You'll have to muster a real knuckle-duster because my house is robuster and you don't cause me to fluster so on with your filibuster, lack-lustre."

Well, Canis Lupis exhaled laboriously, and he exhaled stertorously and exhaled uproariously but he failed most vaingloriously. Sensing the failure of his utmost exhalure, he nevertheless indicated his perseveration with the following asseveration, "I am privy to certain confidential intelligence concerning the geographical delimitation of a pleasant area of edible herbs."

Bantam porcus was heard to blurt, somewhat curt, "Cite the site, locate the locus, or cut out all this hocus-pocus."

"Egad," dogmatised Canis Lupus, "it is within Herr Schmidt's domestic domain and on the proviso that you will be unlimbered on the morrow's dawn, we will forge ahead conjointly and simultaneously and stealthily obtain some for the crepuscular repast."

"A pronounced pronouncement," came the antiphony, "I shall meet both your proviso and you. At what specific division of mean solar time do you propose to proceed?"

"Without being prolix, how does six transfix you?" said Canis Lupus. Bantam porcus was self-possessed as he acquiesced, for he was guilefulest and he hoped to best Canis Lupus.

Thus bantus porcus (tertiary) departed for Herr Schmidt's domestic domain when sixty minutes beyond midnight had been quintuplicated, surreptitiously obtained the edible herbs and returned home before Canis Lupus materialized without his portal. At the appointed hour for the joint venture, Canis Lupus interrogated, "Bantam porcus, are you in a state of readiness?"

Bantam porcus rejoined, "My state of readiness has progressed to fulfillment. Having egressed, digressed, and ingressed, I now possess by my cleverness, herbs that are numberless and I thank you for your amicableness."

Canis Lupus was irascibly choleric but nevertheless thought himself capable of besting this bantam porcus in his continuing game of one-upmanship, so he deposed as follows, "Bantam porcus, I am cognizant of the precise whereabouts of an arboretum yielding delectable pomes."

What the bantam porcus was heard to blurt again could be considered more than animadvert, "Please don't act like a troglodyte, just sight the site in your theodolite."

"They are located at a beauty spot most polygot called Jocund Plot. Deceive me not and I'll come for you when the morrow is but 18,000 seconds old and conjointly we will snitch a smidgeon."

Well, the bantam porcus ceased to be somnolent with one hour's precocity and he sallied forth in pursuit of the pomes with the sanguine expectation of returning before Canis Lupus arrived. But the distance involved exceeded the magnitude anticipated which together with the necessity of an arboreal ascent resulted in the bantam porcus being on a branch when Canis Lupus appeared on the horizon. This happenstance resulted in no little fear on the part of the bantam porcus.

"Egad, bantam porcus," exclaimed Canis Lupus upon arrival, "is it a verifiable empirical fact that you preceded me to this spot? Are the pomes savorable?"

"Affirmative in the superlative," said the bantam porcus. "I will launch one on a trajectory calculated to arc into your manual extremities."

The apogee of the trajectory, it was plain to see, was far from the tree, and while the Canis Lupus was dispersed on his mission of recovery, the bantam porcus bailed out of his arboreal heights and set a direct compass course for his domicile to which he post-hasted himself.

On the succeeding revolution of the earth, Canis Lupis again approached his task. "Bantam porcus, there is a trade exhibit at Saskatoon this afternoon and you I importune with to me to commune thereat."

Bantam porcus bubbled affirmatively, "I am effervescent in my acquiescence." At what juncture do you propose to commence?"

"At three," said he.

So the bantam porcus departed with his customary prematurity and at the trade exhibit dissipated the appropriate amount of monetary exchange for a device used to transform bovine lactation into the high priced spread. Upon leaving the trade exhibit with his new transformer he espied Canis Lupus approaching. This left him indecisive concerning the most appropriate evasive action to pursue. But not for long because the internal dimensions of his newly acquired transformer were sufficient to accommodate his corporeal presence. In the process of his entering, however, the transformer, which was in the shape of a double-tapered cylinder, became shifted on its principal axis so as to produce conditional instability upon which gravity could operate. Thus the transformer with the bantam porcus as its cargo rotated rapidly down the incline past Canis Lupus who was uninclined to tarry and investigate this enigmatic phenomenon but rather was motivated by pusillanimity to evacuate the immediate area in the orientation of his habitation.

Upon the recovery of his sensibility, he went to the bantam porcus' domicile and recounted his trepidation caused by the inexplicable gyration of what he hoped was not an hallucination. This threw the bantam porcus into a spasm of sarcasm, "Forsooth, I did cause you consternation with my rotary reverberation."

This indeed made Canis Lupus view the bantam porcus as an abomination albeit capable of mastication when approached through the vertical fenestration.

Upon a determination of Canis Lupus' aspiration, the bantam porcus prepared a surprise reception at the bottom of the vertical fenester which fortuitously was located directly superior to a calefactor, an appropriate location for receiving a malefactor. And so the bantam porcus magnified the conflagration under a Brobdingnagian samovar and was thus prepared to open the lid just as Canis Lupus slid into the boiling water. And there was embroiled until completely parboiled thrice over. And the bantam porcus consumed him for the day's final repast (he refrained, however, from wolfing his dinner), and survived in gleeful perpetuity thenceforward.

1.8.D.

GLITTER-TRESSES AND THE URSINE TRIO

Transmogrified from an old manuscript*

by Charles M. Brown

During an unspecified period of history, a familial triumvirate of ursine mammals inhabited a domicile in a compacted sylvan area. One of these ursals, Ursa Major, was of preposterous proportions. The second, Ursa Majora, was of mean magnitude, while the third, Ursa Minor, was of diminutive dimensions.

Each held dominion over three prized possessions: a concave hemispherical vessel (for accommodating sustenance), a quadri-legged sedentary support (for intermediate states of repose) and a horizontal raised rectangular platform (for nocturnal tranquility). Each possession was appropriate to the dimensional magnitude of the respective owner.

Early one forenoon, after they had concocted the gruel for the day's initial repast and had deposited it for cooling purposes in their hemispherical concave vessels, they ambled into the dense sylvan area while the gruel cooled. This that they might not overheat their oral cavities by ingesting prematurely, for they had been reared with most conventional propriety.

During their brief absence, a smallish female, dubbed Glitter-Tresses, having been sent by her maternal parent on what proved to be an errant errand, perchanced to pass near the ursal domicile and scanned the interior thereof, through an unshuttered fenestral opening.

And then, because she had been nurtured devoid of manners, she essayed a monocular squint through the key orifice. Observing the

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Transmogrified from an old manuscript*Goldilocks and the Three Bears
with permission from Charles M. Brown, PhD.

complete absence of occupants within the domicile she attempted to rotate the knob. Because the ursine mammals were benign and without guile, they were also naive to the point of leaving the portal unshackled. Glitter-Tresses thus entered without let or hindrance.

She was gratified when she espied the gruel on the sidetable. Had she possessed the proper decorum she would have tarried until the mammals returned. Contrariwise, however, and this because of her complete lack of savoire faire, she proceeded to ameliorate her sensations of gustatory craving (these having been quickened by olfactory stimulation.)

First, she savored the gruel belonging to Ursa Major. Because it was excessively heated, she essayed to eschew the gruel she had espied. In sequence she then savored the gruel of Ursa Majora and Ursa Minor. The former she found to be too close to the frigid end of the temperature continuum but the latter was midway between the extremes of the other two and thus exactly fitting. So much so that Glitter-Tresses consumed it in its entirety.

Whereupon she, feeling exhausted, for this and various other deviations from the straight-line pursuit of her maternal errand, assumed an appropriate position on the quadri-legged sedentary support belonging to the preposterously proportioned Ursa Major. It, alack, lacked sufficient resiliency for proper repose. Next she tested the corresponding piece belonging to Ursa Majora. It was the diametric opposite, being soft in the extreme. She, then resorted to the quadri-legged sedentary support of Ursa Minor, and discovered that it, as in the case of the gruel, was precisely appropriate. So, there she rested but only momentarily. For the underside thereof, separated from its moorings, and quickly descended to the floor.

At this point, possessed of a keen intent to cease action momentarily, Glitter-Tresses ascended to the floor above and entered the bedchamber where the Ursine Triumvirate were wont to slumber. As in previous cases she tried the horizontal raised rectangular platform of each ursine mammal in turn. That of Ursa Major proved to be too elevated at the capital end. That of Ursa Majora was found to be the converse. But that of Ursa Minor was neither this nor that but truly and precisely horizontal, both head to toe and to and fro. So near to perfection was this rectangular raised platform that Glitter-Tresses promptly entered a state of complete somnolence.

Synchronously the ursine triumvirate, cogitating about the rate of temperature decline of the gruel that had left to cook, returned to their domicile to break their fast. Now heedless Glitter-Tresses had left manifest evidence of her depredations which each of the ursals observed in turn.

As he ambled toward the side-table, Ursa Major proposed in his preposterously proportioned voice, "Some person or persons unknown has or have fooled with my gruel."

Then Ursa Majora, in a voice of mean magnitude, muttered, "They have also drooled over my gruel."

At which point Ursa Minor vocalized in a voice of diminutive dimensions, "The same unknown person or persons have not only fooled with and drooled over my cool pool of gruel but also, unless I am cruelly fooled, have devoured the whole of it. Who'll do such a deed, a ghoul?"

Thereupon they commenced minute observations for additional evidence which they promptly found aplenty in the state of disarray of the several quadri-legged sedentary supports.

Again the preposterously proportioned voice of Ursa Major was heard to protest, "He, she, it, or they has or have been occupying my sedentary support."

Not to be outdone, Ursa Majora remonstrated in a voice of very mean magnitude, "They have also been busy about mine as well."

But Ursa Minor outdid them both, even with his diminutively dimensioned voice. "That awfully oafish enigmatic individual has busily occupied mine clear through!"

Their research carried them to the bedchamber where they were wont to sleep. Again in response to evident evidence each in turn bespoke his indignation.

"An imposter has bespotted my four-poster," sputtered Ursa Major in his preposterously proportioned voice.

"An interloper most improper has caused me utter pain by messing up my counterpane," muttered Ursa Majora in her voice with its magnitude becoming meaner by the moment.

"Bespotted four-poster and messed-up counterpanes you may have, but I have discovered the cause reprehensible of these acts indefensible and she appears quite insensible," stuttered Ursa Minor in his diminutive voice.

Glitter-Tresses has perceived the voices of Ursa Major and Ursa Majora but in the depth of her somnial state erroneously misinterpreted them as the pot pourri of a reverie. But the diminutive voice of Ursa Minor pierced her wakefulness.

Apprehending the ursine triumvirate on the yon side of the horizontal raised rectangular platform, Glitter-Tresses emerged on the hither side in full retreat moving directly toward the fenestral opening which fortuitously was so arranged to permit immediate egress.

And egress she did forthwith and posthaste but to what end we know not. None there is to say whether she fractured a limb, became lost in the compacted sylvan area or returned to her maternal parent to receive meritorious punishment for meritricious conduct. But the Ursine Trio saw her nevermore.

ALI BANDINI AND THE TWO-SCORE PURLOINERS

Transmogrified from an old manuscript*

by Charles M. Brown

During early post-deluvian times there abode in a Persian metropolis an impecunious timber surgeon named Back-Street Bandini. Back-Street (called Ali, for short) and his male sibling were joint beneficiaries from their father of a minuscule monetary bequest. The brother, Tossim, wedded a wealthy woman and became a moneyed merchant. But Ali's uxorial acquisition was insolvent and his minuscule monetary bequest was soon dissipated. His uttermost effort to provide familial sustenance consisted of cleaving kindling in the canebrake to canvas in the capital.

On one occasion when the post meridian solar shadows were elongated, Ali was at the boundary of the bosquet, having burdened his beastly assistants with the product of his incisive exertions. Immediately he became auditorily aware of equine pedal percussion. Transversing the tableland a troupe of mounted trotters tore toward him.

In trepidation that this might be a knot of naughty knaves, Ali tied up his equine quadrupeds with alacrity and rope in a thicket. Then he ascended a sapling to sequester himself among the branches until the equestrians quit the area. To his stupefaction they terminated their gallop before a bordering Brobdingnagian boulder. Fierce-appearing individuals they were, too, with scimitars at their sashes.

Transmogrified from an old manuscript*Ali Baba and The Forty Thieves
with permission from Charles M. Brown, PhD.

Before Ali could consternate further, their fuhrer loudly enunciated: "Sever, Seismology."

And the gargantuan granite gravitated grossly exposing the orifice of a spelunk. The orificial opening* was of such magnitude as to permit the simultaneous ingress of a brace of equestrians - and ingress they did, in a score of pairs. Upon their evanescence within the spelunk, the Brobdingnagian boulder assumed its original position.

Ali pondered his position. To descend or not to descend, that was his disquisition. His indecision indubitably availed him for again the gargantuan granite gravitated grossly and the two-score purloiners (for such they were ascertained to be) egressed and the orifice was occluded once more.

Ali descended by leaps and bounds as soon as the purloiners passed from his purview. Standing before the boulder he boldly bellowed: "Sever, Seismology."

Delighted to discern the cover comply, he spunkily entered the spelunk and the cave closed. The calignosity was alleviated by exterior overhead illumination and Ali beheld capital gains incapable of comprehension. There were bulging bags bursting with bullion, jumbo jars jammed with jewels, and fabulous fabrics flung against the four faces of the vault. Indubitably this spelunk had done duty as a depredatory depository for decades.

Quickly he took off his crummy capote and, tying the sleeves, filled it with bullion and baubles.

"Sever, Seismology," he ordered. Again the boulder obeyed and as Ali emerged the crags converged behind him. He conveyed his capacious and cumbrous capote to his animals as quickly as he was capable.

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*Redundant, to be sure, but the mouth of the cave was so large that it must be said twice.

With alacrity he relieved his beasts of some of their burden and replaced it with the baubles and bullion, covering the latter with wood.

Returning to his domicile he deflected his wife's determined interrogations until he had deburdened his beasts and had deposited his newly acquired affluence within his residence. Then as he recounted his escapade, his wife's eyes opened almost to the magnitude of the spelunk's orifice.

"But," he cautioned her, "if the purloiners perceive this, they will prey upon our persons until we are liquidated. Therefore, we must bury everything beneath the boards."

"Can we not quantify our acquisition before we enshroud it?" queried she. "I'll obtain a measuring mug from your sibling's spouse and we can quantify more quickly than through item by item enumeration."

And so next door she touched Tossim's wife for the temporary utilization of a measuring mug. The inquisitorial nature of Tossim's wife was also touched and she secreted some adhesive suet to the nethermost portion of the measuring mug. And when it was subsequently reinstated to its owner a bit of brilliant bullion was discovered.

Tossim's wife alacritously awakened her soporific husband, exclaiming, "The other son of your father, who forever pleads poverty, has such a plethora of purse that he measures rather than enumerates it."

Tossim, fully awakened by the narrative and by avarice. hastened to the house of his sibling. Upon demand the full account was exacted.

"Before the morrow's solar rays have fully penetrated the oriental horizon, I will take a half-score beasts and converge upon the cavern myself," Tossim asserted.

Whereupon his brother urged, "Exercise considerable caution, fraternal sibling, for the two-score purloiners would certainly sever you asunder if they saw you."

Tossim disesteemed the preferred exhortation with, "I need none of your injunctions revered relative."

Tossim tossed and turned the balance of the nocturnal time. Before the solar rays had penetrated the oriental horizon, he sallied forth to seek the spelunk. Because Ali had divulged the locus, Tossim found the Brobdingnagian boulder without hocus-pocus.

Half-hitching his half-score beasts to the arboreal specimens, Tossim appealed: "Sever, Seismology."

And the gargantuan granite gravitated grossly, re-exposing the orifice of the spelunk.

The scene inside the spelunk produced a temporary psychosis. Tossim juggled the jewels, grabbed at the gold, rolled on the rugs, and touched the tapestries in the manner of the most miserly curmudgeon. Ultimately he determined to depart. But what was the activating terminology? His total immersion in such immense substantiality had produced a temporary amnesia with respect to the shibboleth. He knew it had something to do with an earth science.

"Go, Geography," he shouted sans satisfaction. "Part, Paleontology. Pass, Petrology. Give, Geology. Move, Mineralogy. Unlock. Unlatch. Unseal. Unstop." All unavailing.

From within, he audited without the equine pedal percussions of the purloiners' approaching proximity and trembled with trepidation. He bolted to the back of the breach and burrowed behind the bales.

Gaping out, Tossim saw the gargantuan granite gravitate grossly and the purloiners precipitately plunge into the cavern with their carving knives curled in their claws. They had perceived the pack-mules posted at the perimeter and were now pursuing their opponent. Bolting from bale to bale, Tossim endeavored to escape but was sharply stopped by the scimitars of the entrance guards who divided him, head to toe and to and fro.

Behind the Brobdingnagian boulder they dangled the dead and divided Tossim as a dissuasion to whomsoever might discover the deed. Then they departed, driving the dead man's donkeys in advance.

Fruitlessly, Tossim's frau fretted over his failure to return. When darkness descended, she fled to Ali and, almost demented, demanded that he quickly quit the quiet of his house and go in quest of his brother.

"Conceivably in the darkness he has strayed from the straight-line direction to his domicile," Ali answered. "If I am not cognizant of his return by the time I am cognizant of the morrow's solar rays, I will execute my utmost to ascertain his whereabouts."

On the morrow, in the execution of his utmost, Ali soon ascertained the execution of his brother. Wretchedly, he removed the remains of his rattle-brained brother, wrapped them in rugs, reposed them on the backs of his beasts along with some bags of bullion and basted the batch with branches. Mournfully he meandered toward his menage.

Now in Tossim's habitation there abode a female chattel servant cagnominally known as Morgenthaunia. Her fidelity and fearlessness were matched only by her perspicacity and perspecuity. And so Ali went initially to Morgenthaunia and disclosed the horrendous account of its entirety.

"Your mistress must be made inarticulate," he articulated. "Your master's demise must be made to appear unexceptional. For, failing that, the purloiners will surely perpetrate our passing."

"Your message comes in at a readable decibel level and with unexcelled fidelity,* supereminent superior," said the servant. "Perspire not over your perturbations."**

Morgenthaunia managed to have her mistress remain in the middle of the menage where her moans of misery were muffled from the proximal population. Well before the first master of the chicken-run voiced his approval for the sun to rise, Morgenthaunia crept out and darted to an elderly denizen of a hide-handling house.

"At my master's menage is a most delicate, not to say thin-skinned undertaking to be accomplished by a truly professional leather-worker," she informed the elderly occupant. "Prerequisite to the task are super excellent optics, stabilized manual dexterity and cardio-courage. But, in addition to the prerequisites, there are perquisites as well." Thus saying, she placed a ponderous piece of gold plate in his palm.

"The superexcellence of my optical equipment is attested to by my performance at this dim hour. The stability of my manual dexterity is spoken of by the exhibits of my previous performances you can observe about you. Cardio-courage will be displayed by the heart I put into my work, if you but establish the juncture of tempus and locus. Additionally, the perquisites - you did use the plural form? - pique my professional passion," proclaimed the ancient person.

"You have received a most singular perquisite and I will make it plural when you have performed. But first I must occlude your super-

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*"I read you loud and clear" **"Don't sweat it"

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excellent optics in the interest of secrecy," Morgenthaunia pronounced.

Adding action to assertion, she circumscribed his skull and scanners with a sash of silk and shepherded him past the sleeping citizenry to Tossim's residence. There the sash of silk was slipped off his skull and he was set the task of sewing the several severed sections of Tossim together so that he could be prepared for a proper burial. This act accomplished, Morgenthaunia led the unseeing sewer past the sleeping citizens a second time to his shop.

Later, when the sun's rays produced relatively short shadows, Morgenthaunia, in a manner of the mourner, placed ashes on her head before moving toward the market to make the morning's merchandising. Tears flowed and sobs sounded as she asserted to all she encountered that her master had succumbed to a massive cerebral hemorrhage. And none knew otherwise when the severed and sewn remains were interred on the morrow.

Inasmuch as Tossim and his wife had not as much as one offspring, his substance went to Ali (women in those days counted as naught) who managed to move into his late brother's menage and monopolize everything including the widow and Morgenthaunia. Life for Ali assumed the aspects of affluence. He would buy, sell, and barter in the bazaars, living the lazy life of luxury at home. His mind was unburdened by problems common to the common man of who he was one such a short time before. And his scion assumed the managerial role in Tossim's trade undertaking.

This situation did not obtain for an elongated era. For when the two-score purloiners once more shouted the secret shibboleth, they knew at once from the absence of their victim's bones that someone unknown knew their secret. The security of their storeroom was unsafe until he who knew too much was silenced.

One of the petty purloiners prepared to pinpoint the perpetrator of the incursion into their property. In disguise dis guy started for the metropolis and by the operation of chance factors alone found himself at the dawn's dimmest light by the shop of the old leather-worker who already seemed to be sewing successfully. By some serendipity the purloiner cited the skill of the sewer who lacked luminosity.

"Your optical equipment must indeed by superexcellent to sew so," politely pronounced the purloiner.

"Indeed, it seemed I sewed together the severed pieces of a man's body."

"If you can locate the locale of that grotesque occurrence, I will grant you a great gold piece," the panting purloiner promptly promised.

"My optics were occluded at this time. Perhaps if we replicated the situation I could point out the place anew," said the old man.

The pleased purloiner promptly prepared the optical occlusion and the old man promptly located the residence in question. Whereupon the purloiner presented the aged one with his golden guerdon and then chalked a *chi* on the chimney of the chateau.

About 3,600 seconds after that event, perspicacious Morgenthaunia perceived the mark and marked its meaning. Duplicitously she duplicated the chi on all the chimneys within a significant parameter.

When the purloiner persuaded his people to pursue the identified person, to his perplexity he could not pinpoint the place. His furious fuhrer ordered the failure felled and one of his fellows beheaded the fellow.

The chieftain then tendered ten bags of treasure to the one who determined the habitation of their antagonist. But mortal extinction was to be the mede of the miserable man who missed.

Thus it transpired that a second pilferer tried with the same success to locate the locus but moronically made the mark with magenta which Morgenthaunia mentally marked and again dittoed on the other chimneys. Once more the furious fuhrer felt failure and once more another filcher suffered a severed cerebellum.

The principal purloiner planned to plot the place personally which he promptly proceeded to perform. But he memorized the main features of the menage so that he could muster his men minus the misanthropic mischief (so it seemed to him) of a maker of many marks.

On the sixth sunrise later the principal purloiner parallel parked in front of Ali's abode. He masqueraded as a merchant of oil and his retinue consisted of nineteen mules each bearing a pair of ponderous pots.

"Benign sir," lied the leader to Ali, "my animals and I have traversed a long trail today and we are tired. If we might stay the night, I will repay you richly. Observe that I have excellent oil to purvey." And he permitted Ali to peer into one ponderous pot in which indeed was oil.

"My house is not a hotel, friendly foreigner," said Ali. "Never-the-less, please be my guest."

"Your generosity shall be reciprocated," responded the principal purloiner.

The masquerador and his mules were mustered into the middle yard and the ponderous pots placed on pads and the mules massaged, fed, and bedded. The recipient of this generosity was assigned a chamber overlooking the courtyard.

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To this point all had progressed as the principal purloiner planned - for each of the ponderous pots but one possessed an assassin, the remnant of the two-score original brigands. The balance of the plan called for the principal purloiner to pitch pebbles at the pots as the signal for the onset of the onslaught - Ali's reciptrocation was to be the slaughter of the entire household.

But once more Morgenthaunia was to thwart the thieves. Before bedtime she was under the necessity of replenishing the household oil vessel which she essayed to accomplish from one of the gigantic jars in the courtyard. With odds of 37 to 1, small wonder that she opened the jug of a thug - the ponderous pot possessed a purloiner. To her stupefaction and trepidation, she heard a masculine inflection softly utter, "Has the designated time segment presented itself as yet?"

Morgenthaunia's mental machinery made the maneuvers needed in a matter of milliseconds and she minded the manner of response required. "The designated time segment has not as yet presented itself."

Morgenthaunia then proceeded from ponderous pot to ponderous pot obtaining a duplicate interrogation and returning the repeated response. Later, as respite from her chores permitted, she filled every cauldron in the kitchen with oil from the singular ponderous pot and then placed each cauldron on the cooking conflagration until the oil boiled. Then most cautiously she carried the cauldrons out to the courtyard and cooked each and every crook in his crock before he could cry out. Satisfied that the several stealers were sizzled and slain, she slipped into her sleeping quarters for a siesta.

In the Stygian darkness of the noiseless night the principal purloiner was positive all people in the place were placid. He wordlessly opened his window and wafted a pebble at the proximest ponderous pot. But no purloiner projected his pate. Again the principal purloiner projected a pebble at a pot without producing a product. Perplexed, he proceeded to the place where the pots were put and peered into one. His full knowledge of this fait-accompli filled him with fear and fury and he fled to the forest.

On the aurora, Ali failed to fathom the fact that the fellow had fled. But Morgenthaunia's explication provided complete understanding, and led to lacrimation in gratidue for the ability of Morgenthaunia not only to cogitate with alacrity but to execute expeditiously. He perceived that her performance had preserved them all.

"Morgenthaunia, from this moment of time reckoning henceforth you are released from the category of bondage and are at liberty freely to select behavior patterns of your own choosing - albeit inconceivable to me that we shall be capable of continuing without your cunning," said Ali.

"This categorical release fills my ego with satisfactory sensations," Morgenthaunia responded. "All that notwithstanding, however, and with your leave, I prefer to remain in my original status." She spoke thusly because of her intrepid trepidations for the safety of the family for she knew the principal purloiner still prowled somewhere on the perimeter.

And that most disturbed individual still cogitated nothing but retaliation, reprisal, repayment, and retribution. For many earthly revolutions he beheld Ali Bandini's habitation from a hide-away. His espionage activities produced the intelligence that Ali's scion proceeded with prompt punctuality at a pristine hour to his place of financial pursuit. So it came to pass that the principal purloiner proceeded to become the proprietor of the adjacent property and promptly promoted a paradoxical partiality with Ali's son.

His personal magnetism and amiable beneficence were such that the fledgling could seldom soliloquize on something else. Upon his paternal parent's exhortation, the scion invoked the unknown entrepreneur to a gastronomical entertainment.

Now the chief thief had sought relief from his former identity by farming his facial filament and coloring his capital coiffure. He affected a unique inflection and in innumerable ways attempted to assume acculturation. Thus none suspicioned his unadorned identity. But the sagacious servant sister, Morgenthaunia, fathomed the fake with a flash of fleeting feeling. And when her service duties required her nearest proximity she perceived a covert carver in his cloak. During the post-picnic demitasse, Morgenthaunia requested Ali's permission to favor the folks with a terpsichorean fandango.

Ali felt this would be a fine feature for he had followed her flying feet before. When Morgenthaunia returned, bedecked for the dance, two daggers dangled from her dainty digits. To a rhythm elicited from a tom-tom by a talented tot, she twirled, twisted, and turned until she tantalized the entire entourage. And at the precisely appropriate point of time she projected the point of one dagger into the principal purloiner's palpitator.

With repugnance at the apparently unwonted homicide, Ali remonstrated: "Morgenthaunia, have you been deprived of your mental acuity and sense of social serenity? Surely we shall suffer scandal and shame without surcease for this inexplicable execution."

"Contrariwise, my master. Instead of scandal, you have safety. Not shame, but security. Observe with diligence the details of your departed guest. He was the principal purloiner. And here is his cleaver, cleverly intended for your person."

Clearly perceiving the cleaver, Ali peered perceptively at the purpoted purloiner and pronounced: "I have already released you from your servitude, sagacious servant. What otherwise might I now perform to exhibit my gratitude?"

The scion spoke for the servant: "With my honored sire's permission might I make an assertion? Morgenthaunia and I have known for many lunar phases that we possess reciprocal attachment. Will you bestow your sufferance upon our nuptial notions?"

"With alacrity and without reluctance. There is no possibility that you could have picked a preferable partner." And he spoke without consulting his consort.

And thus, with appropriate deliberate haste, the nuptial knot was connected and there was gormandizing and polonaising.

And so for untold periods of historical development, Ali's minions had millions for merely mouthing: "Sever, Seismology."

(Now doesn't that shake you up?)

MOUNTAINS OUT OF MOLEHILLS

Here are eight simple sayings translated into complicated language. Match them with the original proverbs on the right.

1. A superabundance of talent skilled in the preparation of gastronomic concoctions will impair the quality of a certain potable solution made by immersing a gallinaceous bird in ebullient Adam's ale.
2. Individuals who perforce are constrained to be domiciled in vitreous structures of patent frangibility should on no account employ petrous formations as projectiles.
3. That prudent avis which matutinally deserts the cosiness of its abode will ensnare a vermiculate creature.
4. Everything that coruscates with effulgence is not aurous.
5. Do not dissipate your competence by hebetudinous prodigality lest you subsequently lament an exiguous inadequacy.
6. An addlepated bonehead and his specie devaricate with startling prematurity.
7. It can be no other than a maleficent horizontally propelled current of gaseous matter whose portentous advent is not the harbinger of a modicum of beneficence.
8. One should hyperaesthetically exercise macroscopy upon that situs which one will eventually tenant if one propels oneself into the troposphere.

a. The early bird catches the worm.

b. A fool and his money are soon parted.

c. Waste not, want not.

d. Too many cooks spoil the broth.

e. Look before you leap.

f. All that glitters is not gold.

g. People who live in glass houses shouldn't throw stones.

h. It's an ill wind that blows nobody any good.

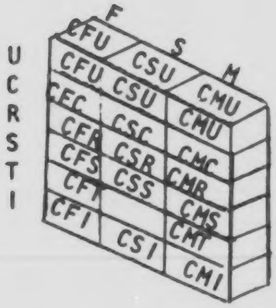
+++AFTER TRYING THIS SEMANTIC EXERCISE WHAT CONCLUSIONS HAVE YOU REACHED ABOUT THE USE OF WORDS AND COMMUNICATION?

1.

2.

3.

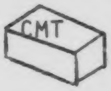
4.



Concept Cognition

Curricular Objective

1.9 The student will create three words that have pictured the attributes of that word (Logographs).



Input

Discuss a word and its characteristics - such as "goat"

I. List all the attributes of the word on the board.

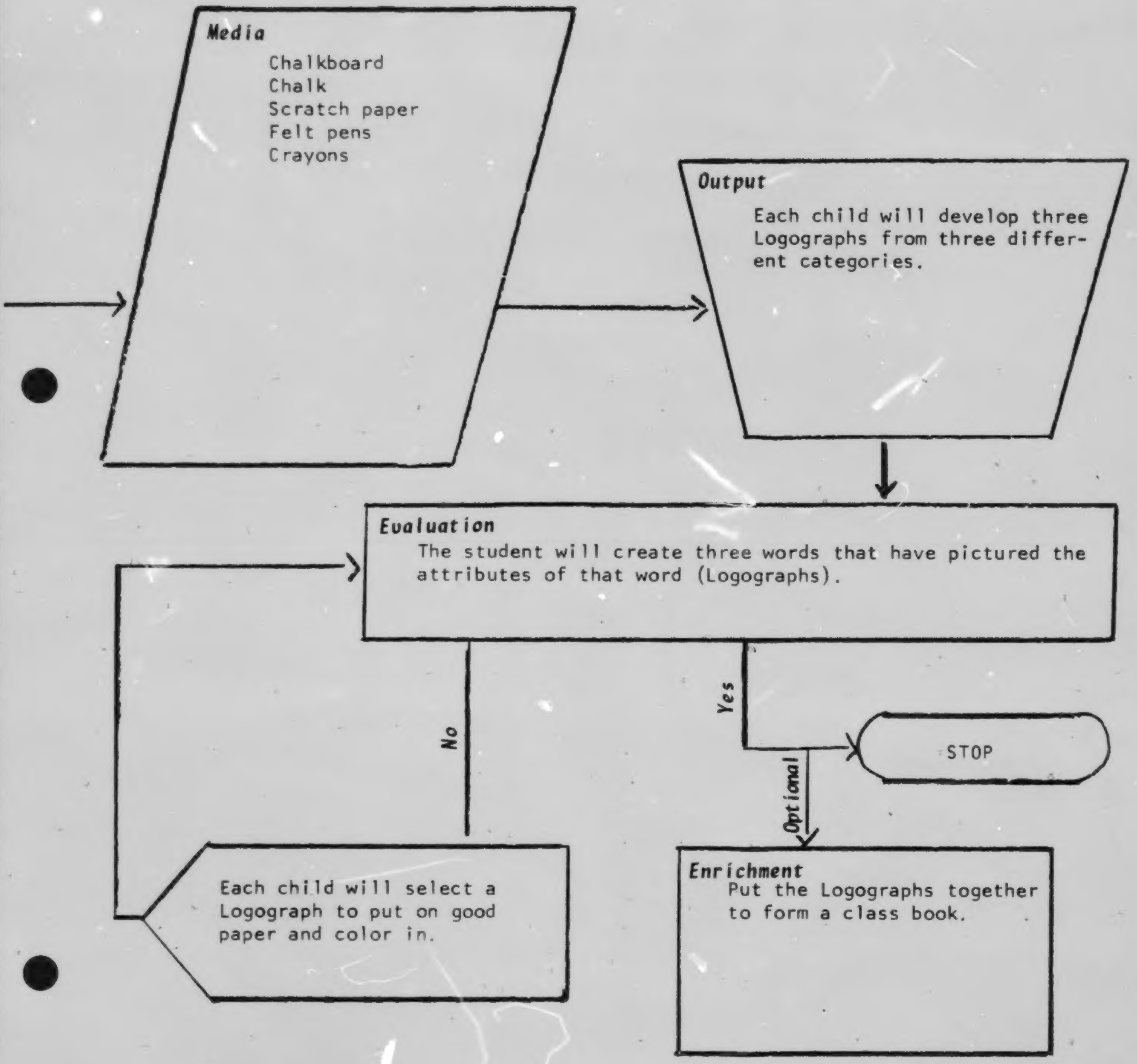
II. Change as many letters of the word as possible into the attributes of the word. (See: 1.9.A., 1.9.B., 1.9.C.)

Learning Opportunities

I. The child will try a word of his own choice.
   A. He will list the attributes of the word.
   B. He will draw the attributes into the letters of the word.

II. Have the child choose another word from another category to make into a Logograph.
   A. The child will develop three or more words into Logographs.

III. Suggested categories for selecting words for Logographs:
   A. Animals
   B. Plants
   C. Insects
   D. Foods
   E. Transportation
   F. Modern Inventions
   G. Geographic Locations
   H. Emotions
   I. Occupations
   J. Science



Media

Chalkboard
Chalk
Scratch paper
Felt pens
Crayons

Output

Each child will develop three Logographs from three different categories.

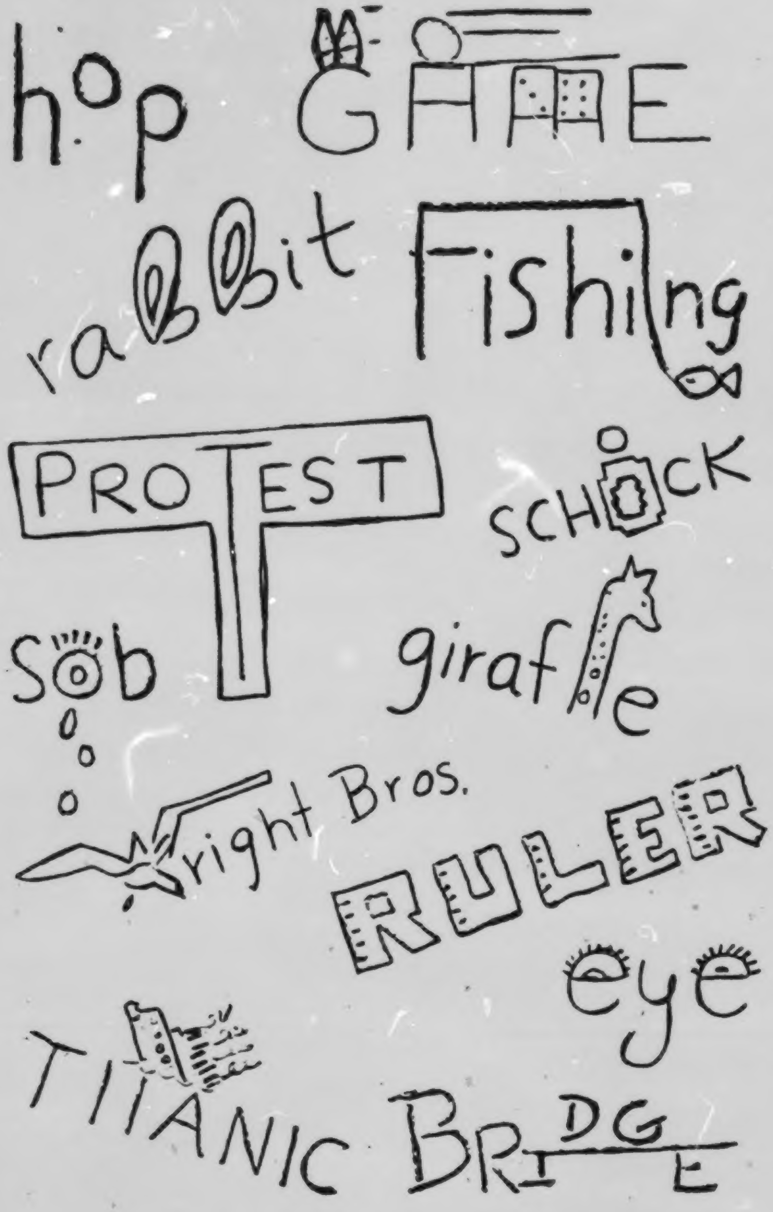
Evaluation

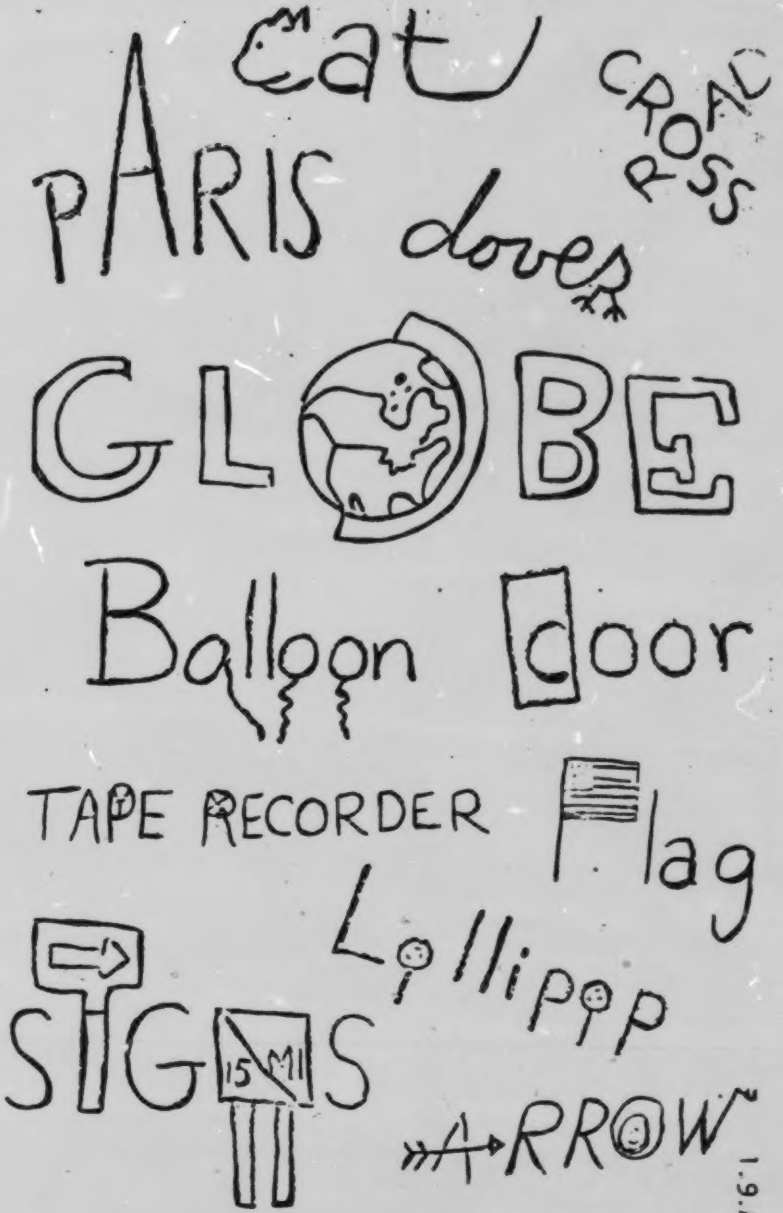
The student will create three words that have pictured the attributes of that word (Logographs).

Each child will select a Logograph to put on good paper and color in.

Enrichment

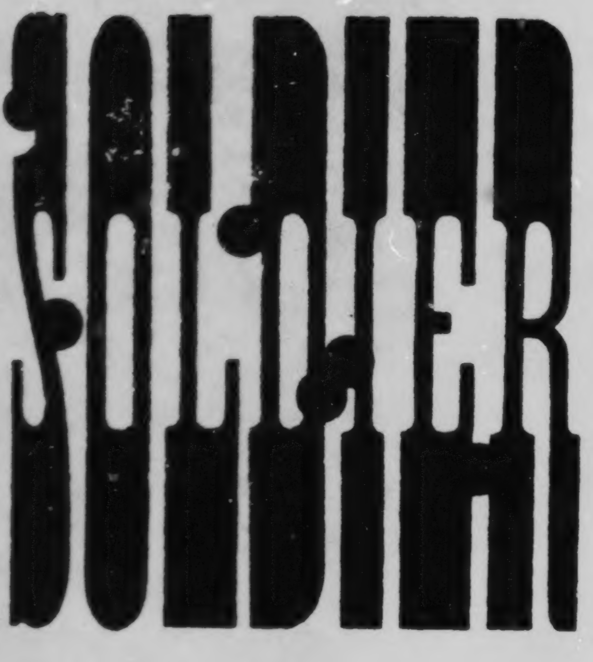
Put the Logographs together to form a class book.

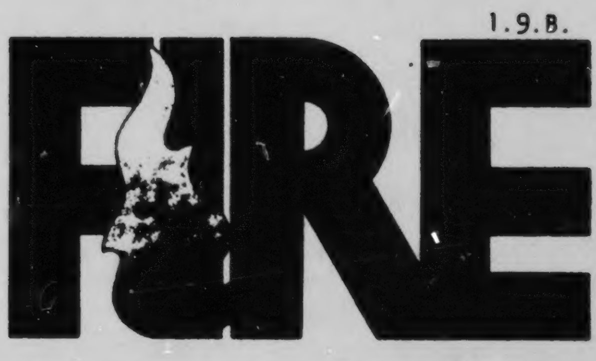

hop
GAME
rabbit
Fishing
PROTEST
SCHOCK
sob
giraffe
Wright Bros.
RULER
eye
TITANIC
BRIDGE

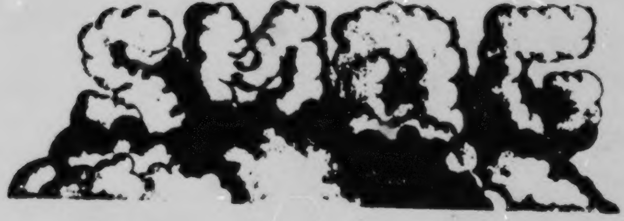

cat
PARIS
CROSSROAD
doves
GLOBE
Balloon
door
TAPE RECORDER
Flag
Lollipop
SIGNS
15 MI
ARROW

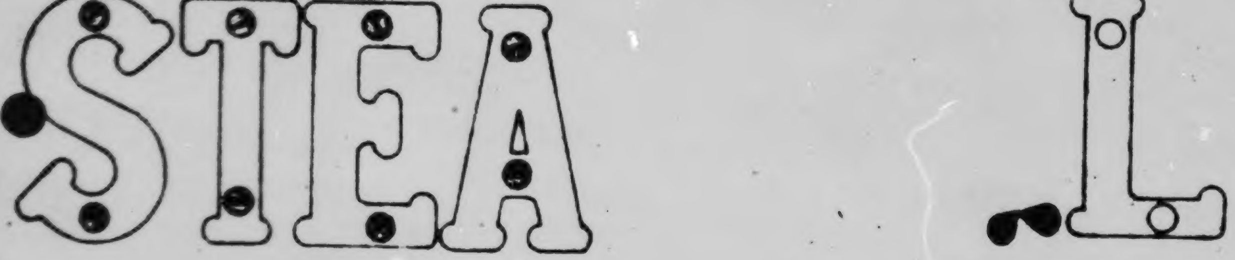
I.9.A.

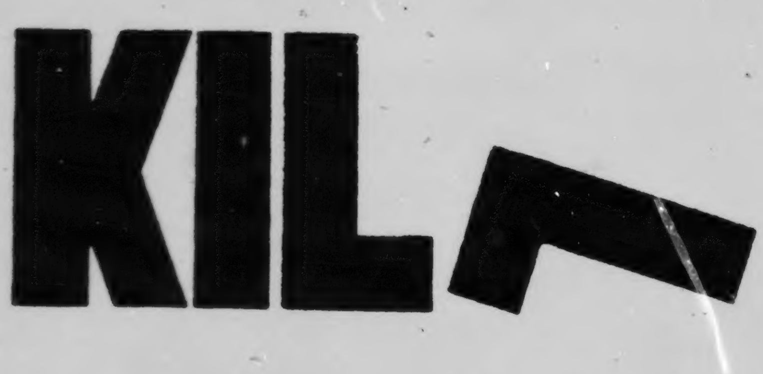
1.9.B.

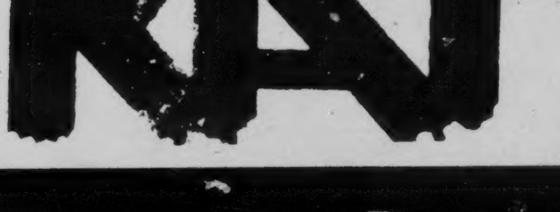


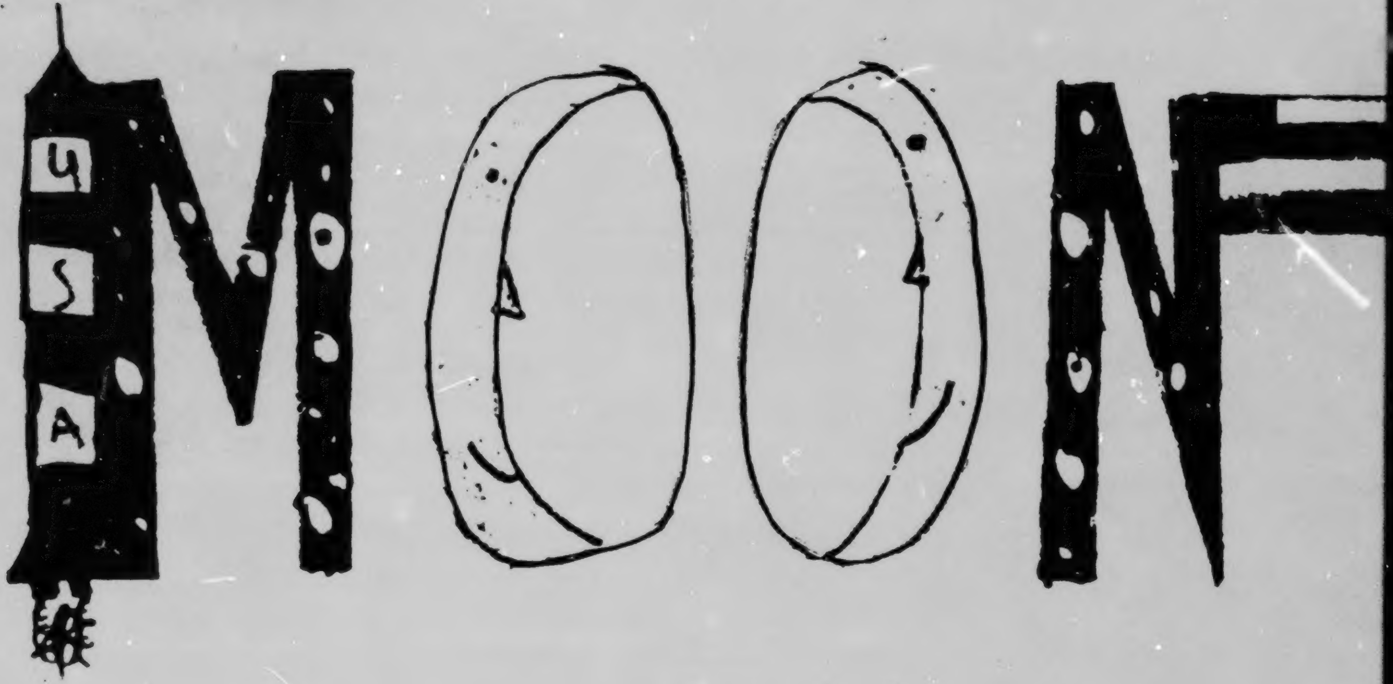




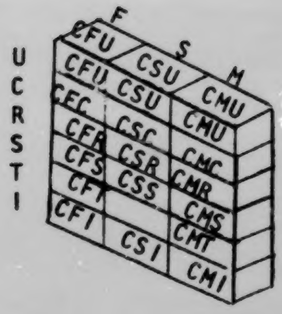








by Janet Conley, East Whittier student

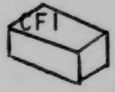


Recommended for Grade 6 only.

Concept Cognition

Curricular Objective

1.10 The student will apply his own perceptions to the completion of an outlined picture.



Input

Discuss why each person sees the world differently.

Discuss point-of-view and how it is formed.

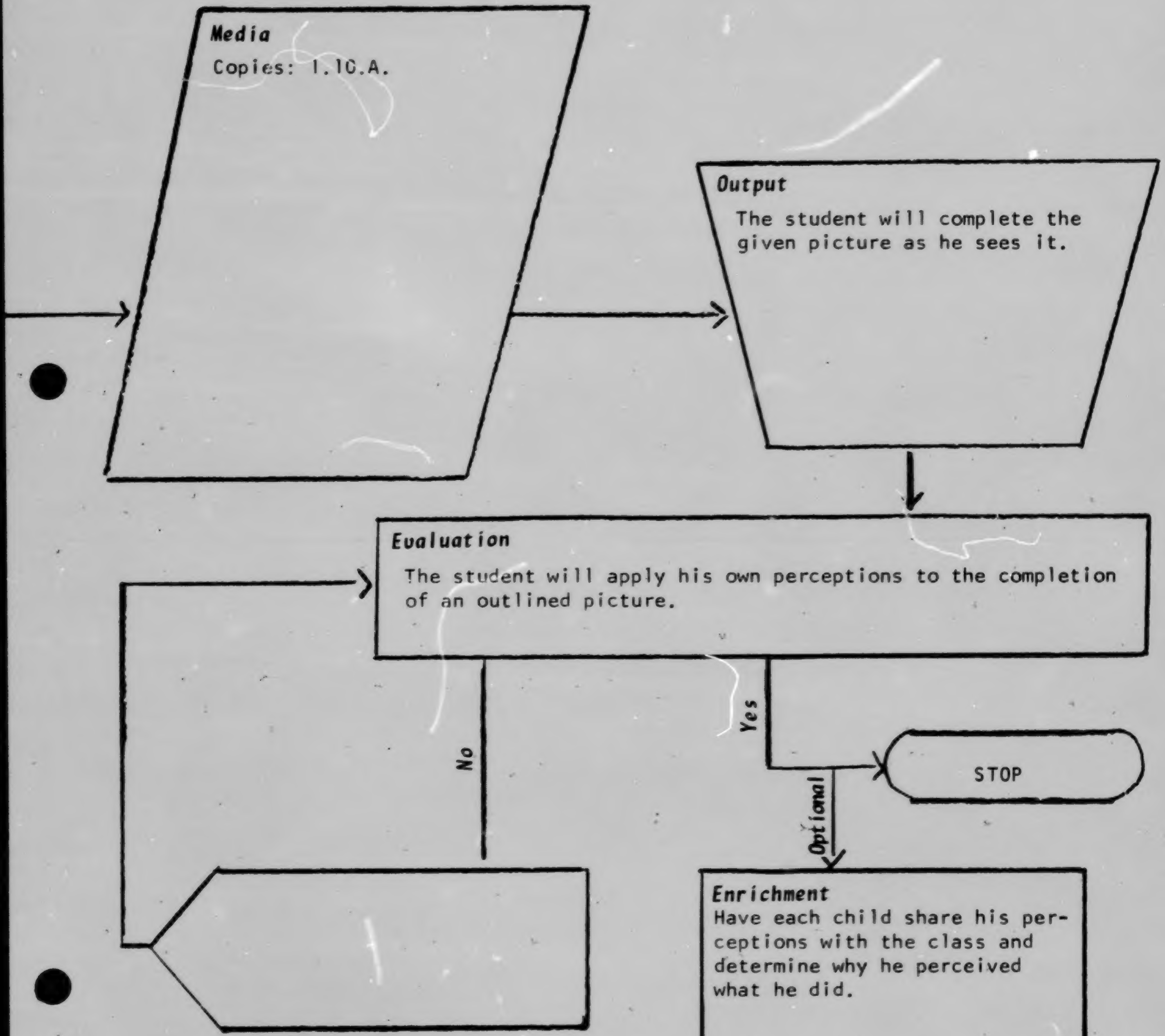
Discuss what our past experiences do to influence the way we look at the world.

Learning Opportunities

I. Review the word "perception" and ask the children to explain what it means to them.

II. Ask the children how they know the clock on the wall is really there.
   A. Bring out the fact they have touched and used a clock in their past experience.

III. Distribute a copy of 1.10.A to each child.
   A. Ask each person to turn this paper around in any way they want.
   B. Ask them to perceive a complete picture or scene.
   C. Have them color it in as they see it.



Media

Copies: 1.10.A.

Output

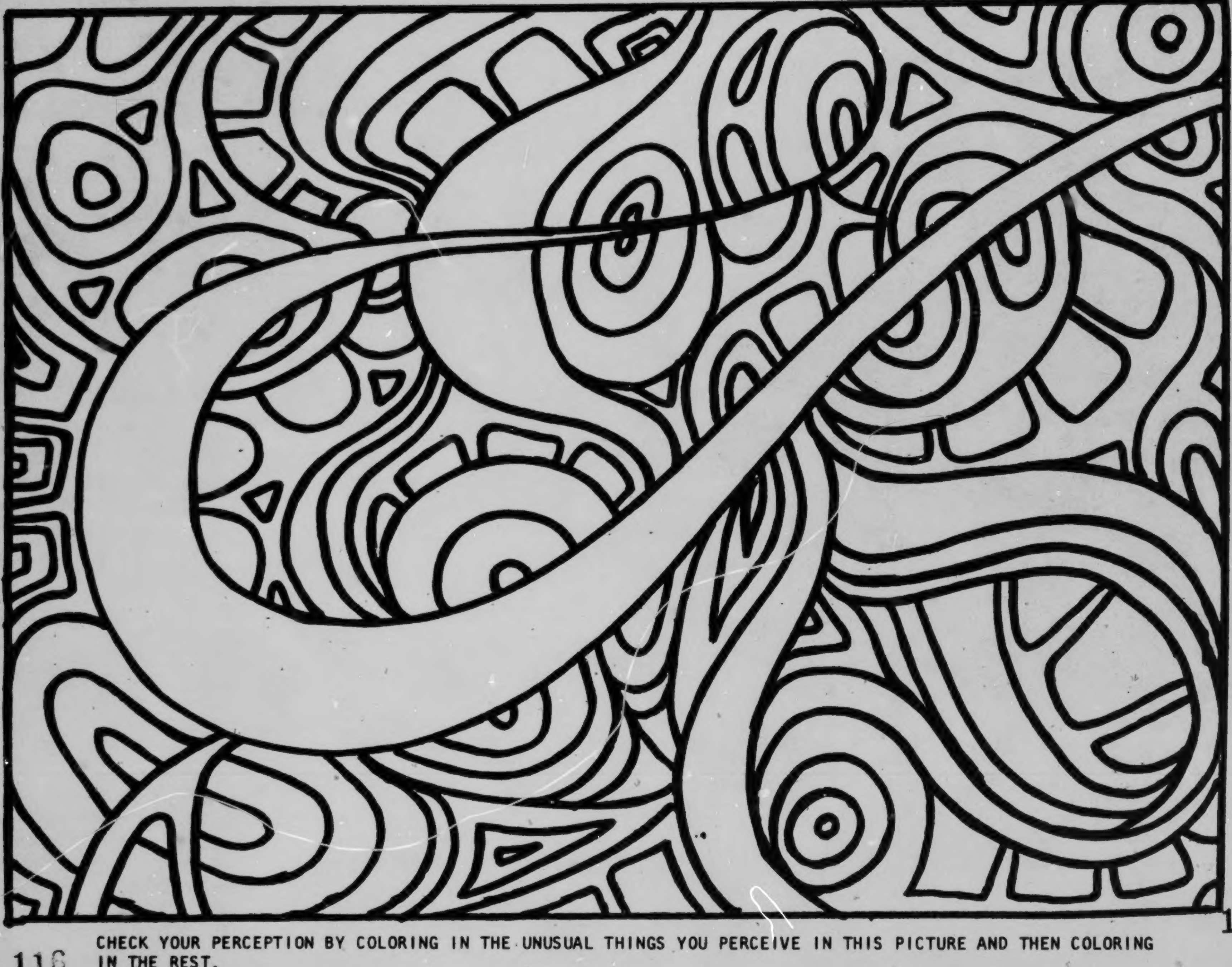
The student will complete the given picture as he sees it.

Evaluation

The student will apply his own perceptions to the completion of an outlined picture.

Enrichment

Have each child share his perceptions with the class and determine why he perceived what he did.



1:10.A

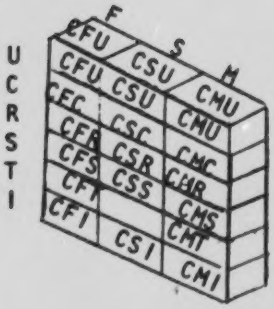
CHECK YOUR PERCEPTION BY COLORING IN THE UNUSUAL THINGS YOU PERCEIVE IN THIS PICTURE AND THEN COLORING IN THE REST.

IV. Discuss how sometimes we are forced to change our perceptions.
   A. Discuss how in a few years our perceptions of size and distance will be changed.
      1. Ask children if they know what this forced change is (the metric system will be presented in California schools).
   B. Discuss how this event will change our perceptions.

V. Distribute copies of 1.11.A. and ask children to perceive what the picture is.
   A. Remind them to change their perceptions to see what the whole picture is.
   B. After the children have discussed their perceptions, explain that this was a photographer's perception of melting snow. In it he saw the face of Christ.

VI. Distribute copies of 1.11.B. and follow the same procedure.
   A. They have to shift their perceptions to identify the subject of the photograph - it's a cow!

VII. Distribute copies of 1.11.C. and ask the children to change their perceptions enough to figure it out.



Recommended for Grade 6 only.

Concept Cognition

Curricular Objective

1.11 The student will determine the difficulty involved in changing his perceptions.

Input

Discuss how our perceptions are stored in our memory in the same way they go into our heads.

Ask the children if they have ever seen or heard something "incorrectly" - they thought they were accurate, but later found out they were "wrong."

1. Ask them for some reasons why this might happen.

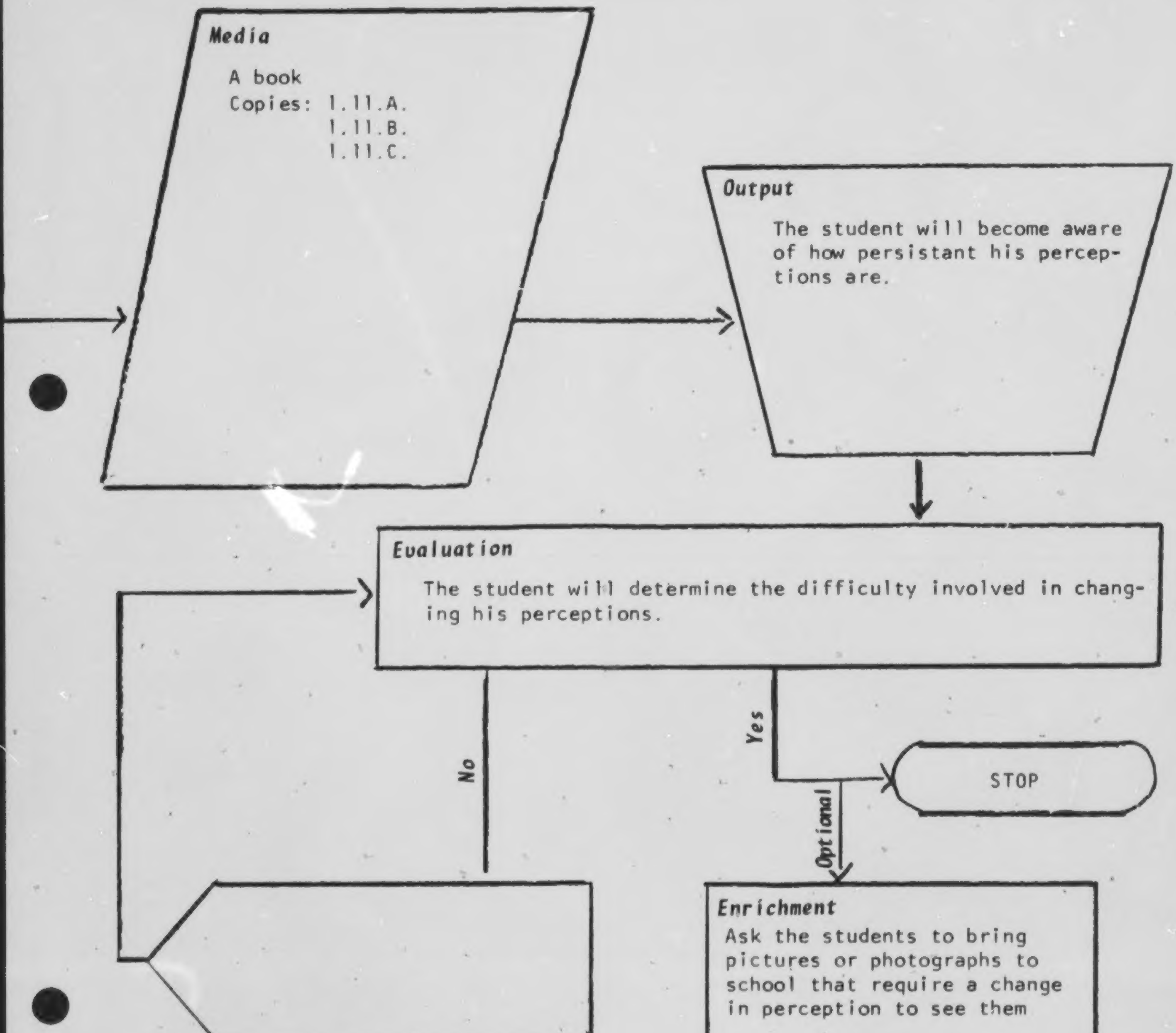
Learning Opportunities

I. Hold up a book and ask the children to name the object.
   A. Discuss their perceptions of what a book is.
   B. Have them describe a book as they perceive it.
   C. Ask them to perceive in their imaginations a book in another form. (No covers, no pages, etc.)
      1. Have the children tell if they can picture this in their minds or not.
   D. Explain the use of microfilm in the Library of Congress and scrolls by early civilizations, etc.

II. Ask why it is "hard" to change our perceptions (as in the case of the book.)
   A. Explain how experience sets the mind to see things in a certain way and it is difficult to shift it.

III. Explain that perceptions can be changed when a person gets tired of a perception and wants to change it.

(over)



Media

A book
Copies: 1.11.A.
1.11.B.
1.11.C.

Output

The student will become aware of how persistant his perceptions are.

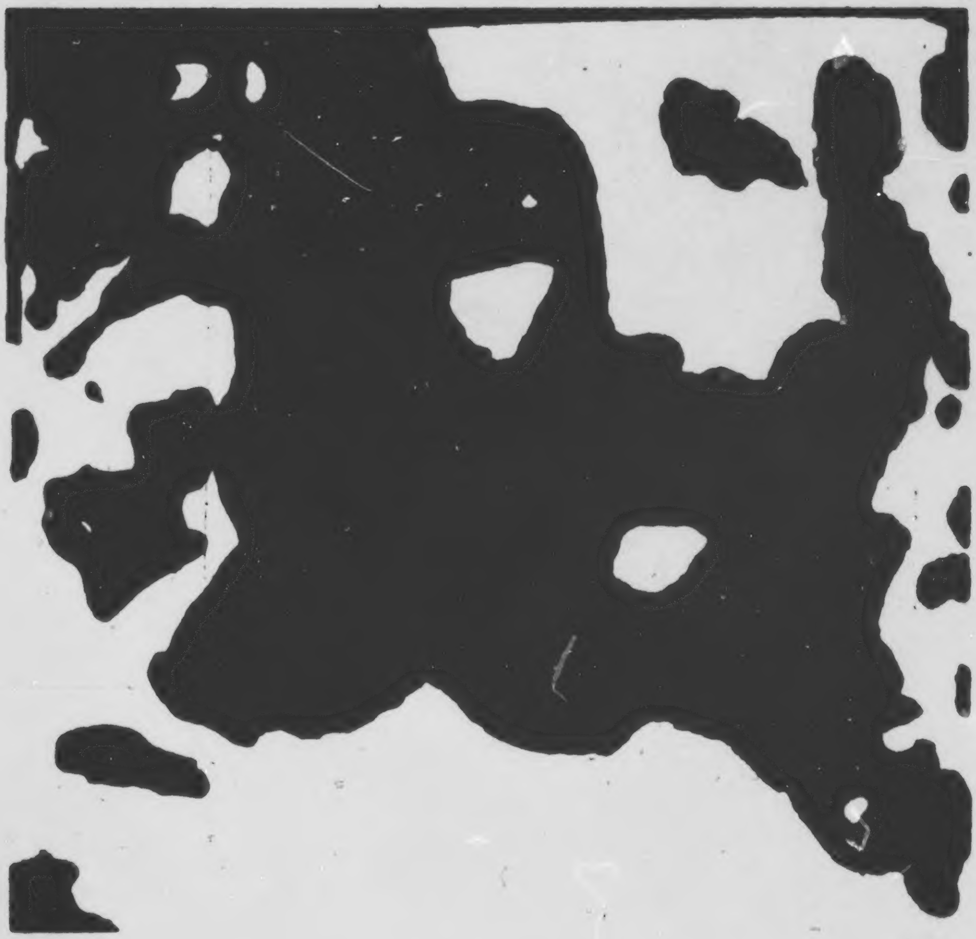
Evaluation

The student will determine the difficulty involved in changing his perceptions.

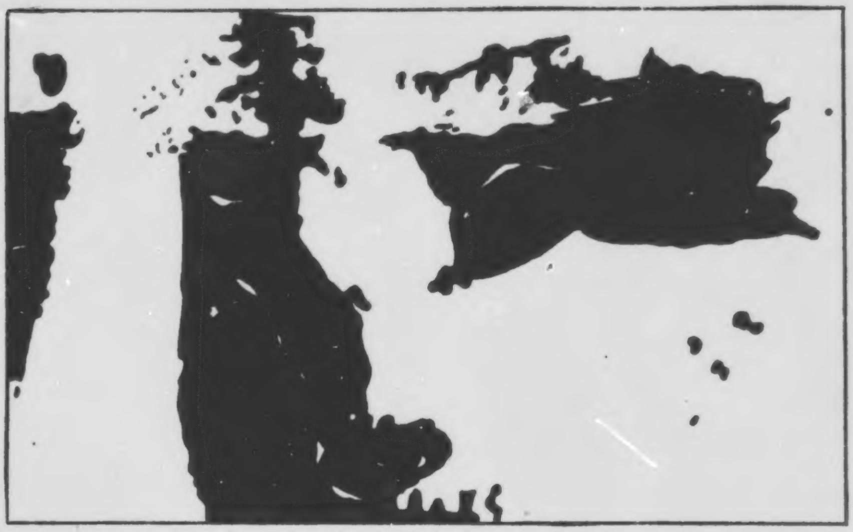
Enrichment

Ask the students to bring pictures or photographs to school that require a change in perception to see them

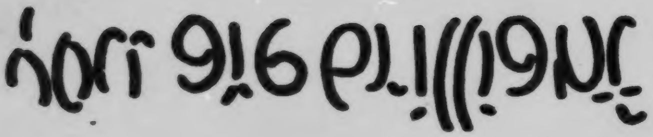
"GENIUS, IN TRUTH, MEANS LITTLE MORE THAN THE FACULTY OF PERCEIVING IN AN UNHABITUAL WAY." - William James



From Creative Behavior by Sidney J. Parnes, c.1967 Charles Scribner's Sons

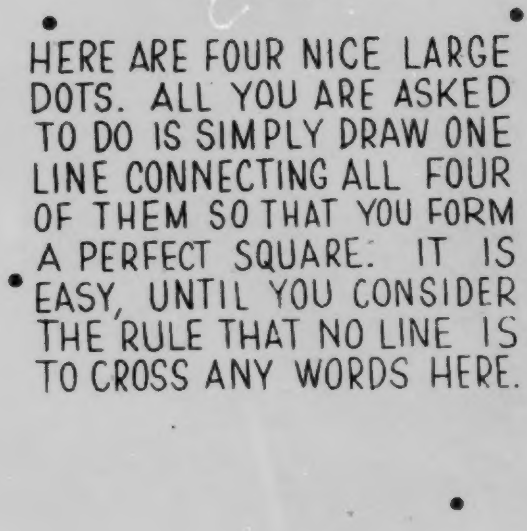


From Creative Behavior by Sidney J. Parnes, c.1967 Charles Scribner's Sons



MATTER OF TIME

If you like to feel pleasantly flattered, the illustration shown here contains the ingredients. The shorter the time it takes you to find the meaning of what is shown, the more the message applies.



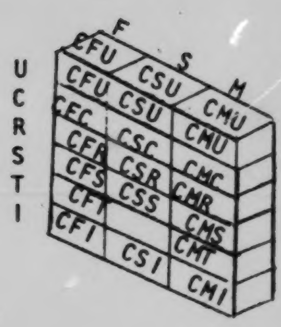
HERE ARE FOUR NICE LARGE DOTS. ALL YOU ARE ASKED TO DO IS SIMPLY DRAW ONE LINE CONNECTING ALL FOUR OF THEM SO THAT YOU FORM A PERFECT SQUARE. IT IS EASY, UNTIL YOU CONSIDER THE RULE THAT NO LINE IS TO CROSS ANY WORDS HERE.

SQUARE-OFF

Most typesetting is neatly squared-off. Both the right and left margins are even, unless purposely designed to be different. Therefore it should be easy to draw a square box around words that are even at both sides?

But is it really?

Try your hand at drawing a perfect square around the words shown above (not including, or even ignoring the headline). There are but two requirements. First, the lines of the square must include the four large dots along the lines of the square. Second, none of the lines are to cross any of the type.

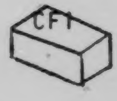


Recommended for Grade 6 only.

Concept Cognition

Curricular Objective

1.12 The student will become aware of how changing perceptions lead to new ideas.



Input

Discuss getting used to the things around us.

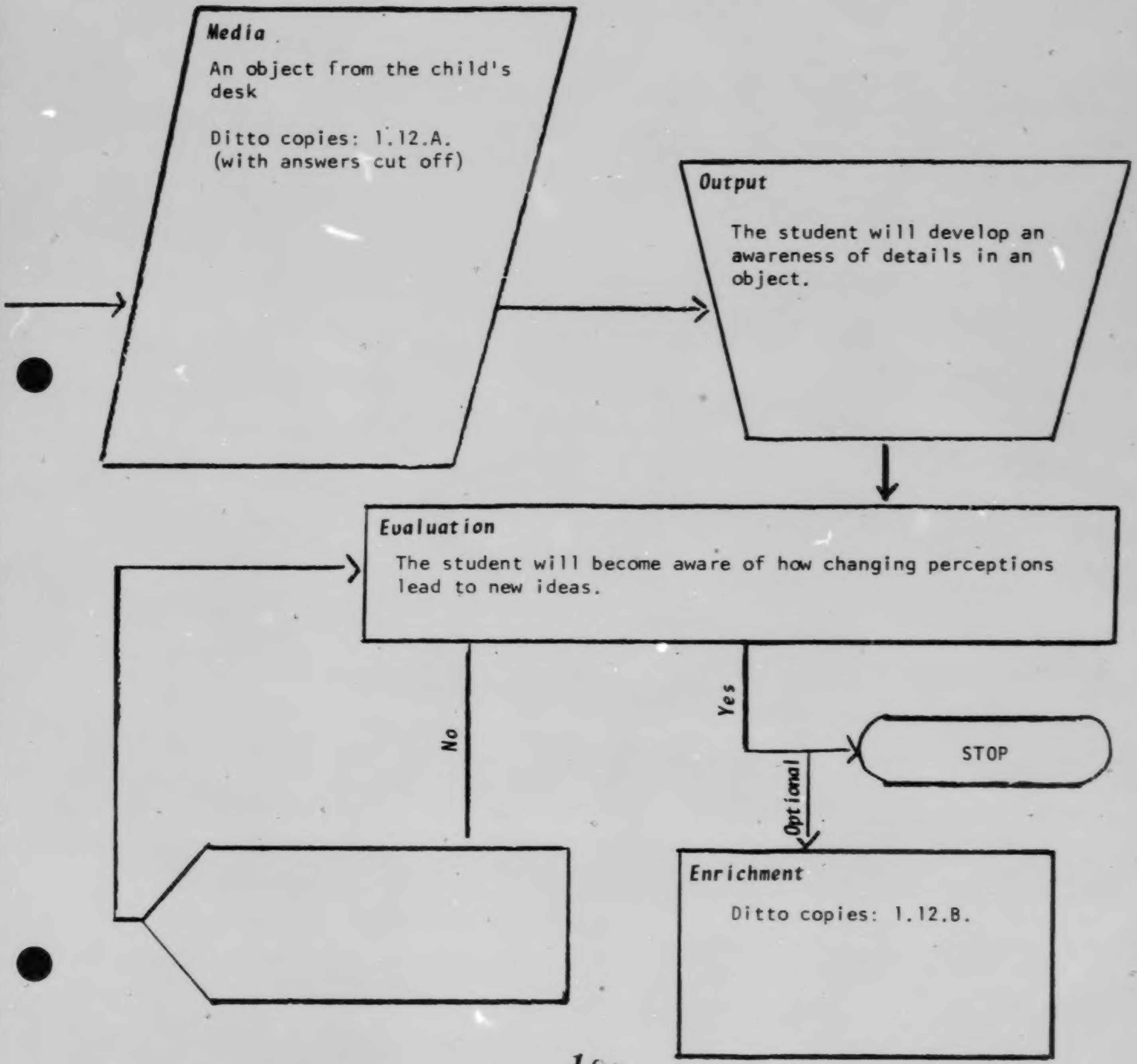
Discuss seeing things in new ways.

Learning Opportunities

I. Have each child select an object from his desk (preferably one he sees each day).
   A. Have him list all he sees in the object in five minutes.
   B. Have him put a check in front of all the new things he saw in the object.

II. Discuss the number of new things the children saw.
   A. Discuss how this experiment makes them more aware of the object.
   B. Discuss ways to change the parts of the object to make it better.

III. Distribute copies of 1.12.A. to see how well they can change their perceptions.



Media

An object from the child's desk

Ditto copies: 1.12.A. (with answers cut off)

Output

The student will develop an awareness of details in an object.

Evaluation

The student will become aware of how changing perceptions lead to new ideas.

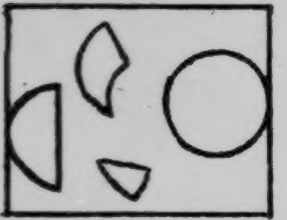
Enrichment

Ditto copies: 1.12.B.

ARE YOU INGENIOUS?

1.12.A.

Maybe there is nothing new under the sun. But new ways of combining and utilizing existing objects keep the architect, engineer, scientist, inventor, and even the artist in business. To make new shapes out of old requires organized thinking and ingenuity. Can you solve these puzzles?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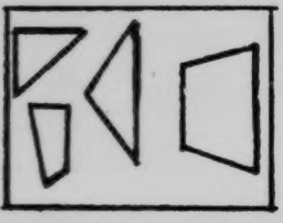

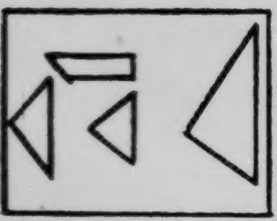
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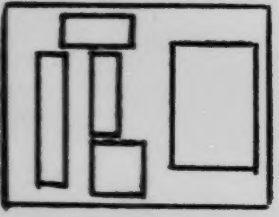
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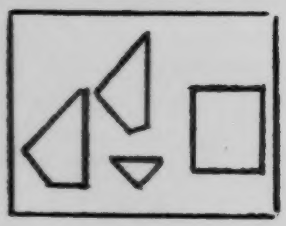
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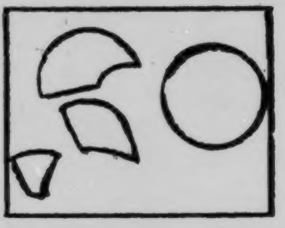
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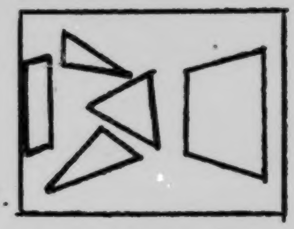
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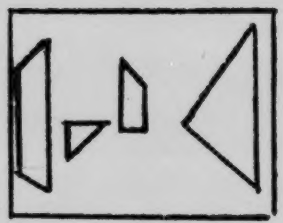
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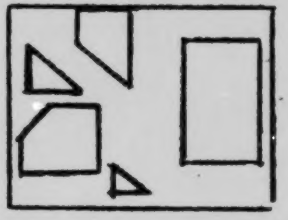
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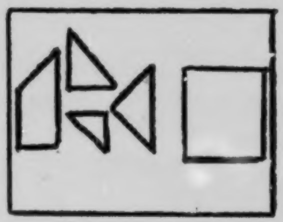
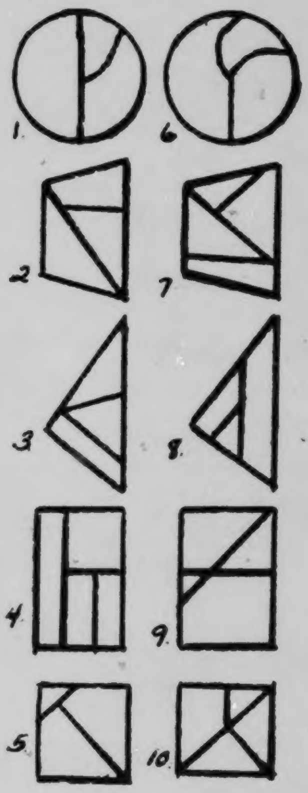

10.

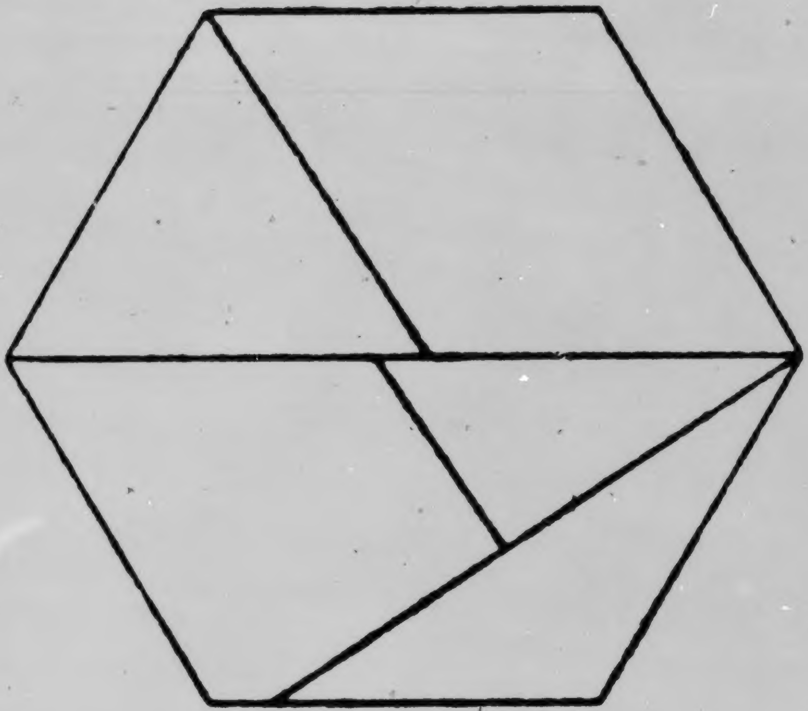
DIRECTIONS: TIME LIMIT - 25 minutes
In each of the 10 problems, the separate pieces can be put together to form the figure at the left. Draw freehand lines on the large figure to indicate how it could be made up of the pieces. You may measure with your pencil or fingers only.

(Cut off Answers)

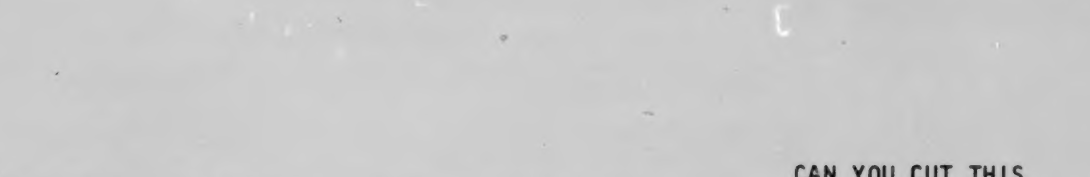
ANSWERS



1.12.B.

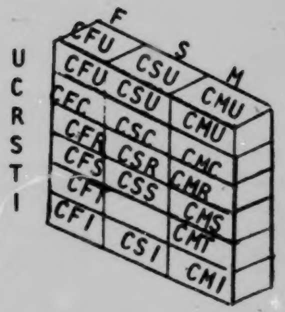


FORM A
SQUARE
FROM
THESE
SHAPES



CAN YOU CUT THIS
APART AND FIT
IT BACK
TOGETHER?

From Pic-A-Puzzle by Schadler-Seymour, page 99. Published by Creative Publications, Palo Alto, California.



Recommended for Grade 6 only.

Concept Cognition

Curricular Objective

1.13 The student will become aware of the effect of semantic labels on their perceptions.

Input

Discuss what an opinion is and how it is formed.

Discuss how our perceptions influence our opinions.

Discuss the labels we put on the things we buy.

Discuss why labels on cans and boxes are important.

Learning Opportunities

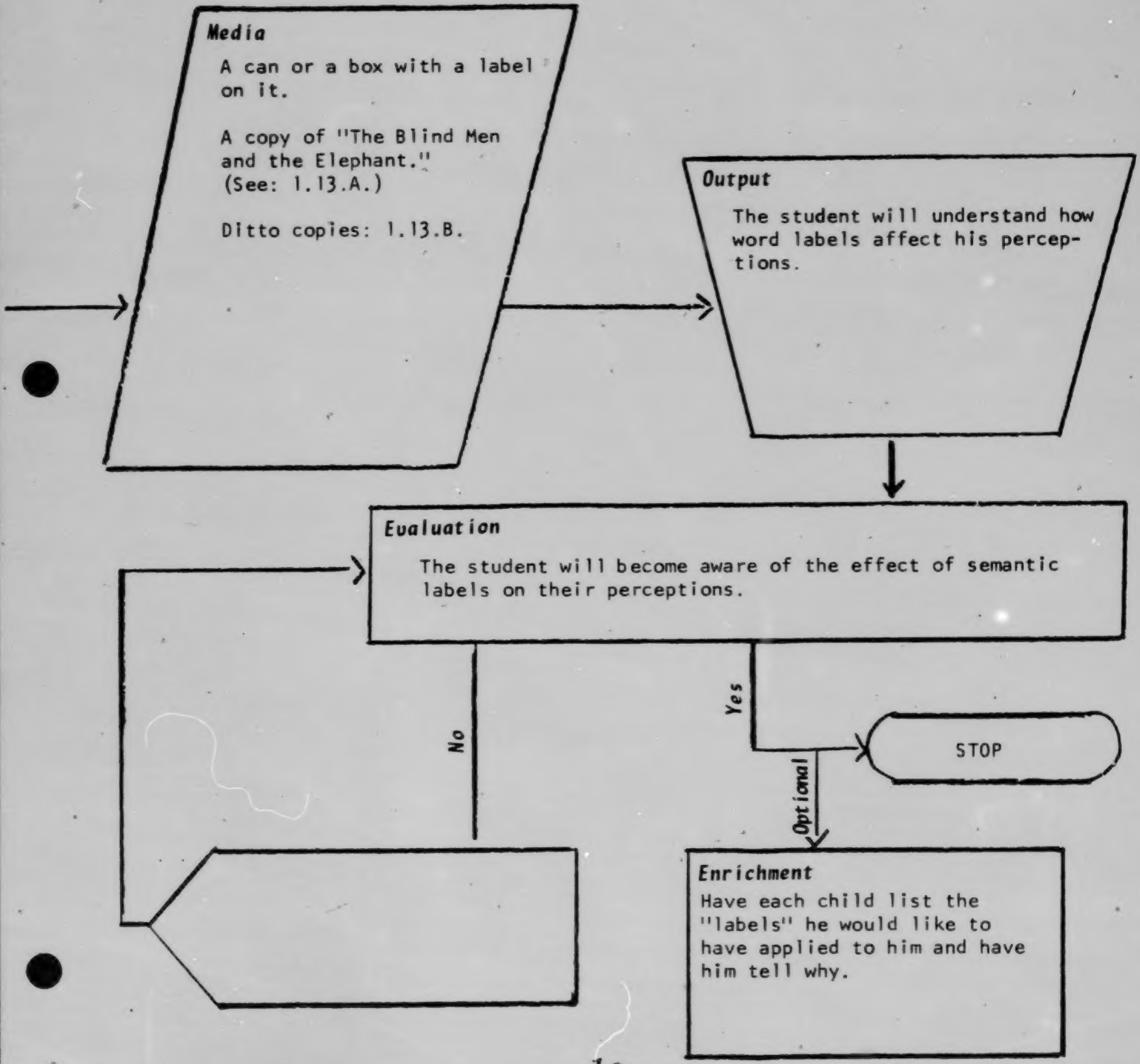
I. Ask the children if we ever use "labels" for people as well as objects.
   A. Identify some of the "labels" we put on people based on our perceptions. (good athlete, poor sport, ugly, beautiful, stupid, smart)
   B. Discuss whether these labels we use are always accurate.

II. Discuss how putting a "label" on someone affects our perception of that person. (It has been found that the "label" we put on a person affects the way we treat that person.)

III. Discuss how each person might change his perceptions and therefore his labels he has put on other people.

IV. Read "The Blind Men and The Elephant" (1.13.A.)
   A. Discuss how their perceptions led them into assuming they had the correct "label" for an elephant.

V. Distribute copies of 1.13.B. and see if the children can change their perceptions to match the labels.



Media

A can or a box with a label on it.

A copy of "The Blind Men and the Elephant." (See: 1.13.A.)

Ditto copies: 1.13.B.

Output

The student will understand how word labels affect his perceptions.

Evaluation

The student will become aware of the effect of semantic labels on their perceptions.

Enrichment

Have each child list the "labels" he would like to have applied to him and have him tell why.

THE BLIND MEN AND THE ELEPHANT

A Hindu Fable

by John Godfrey Saxe 1816-1887

It was six men of Indostan
To learning much inclined,
Who went to see the Elephant
(Though all of them were blind)
that each by observation
Might satisfy his mind.

The FIRST approached the Elephant,
and happening to fall
Against his broad and sturdy side,
At once began to bawl:
"God bless me! but the Elephant
Is very like a wall!"

The SECOND feeling of the tusk,
Cried, "No, what have we here
So very round and smooth and sharp?
To me 'tis mighty clear
This wonder of an Elephant
Is very like a spear!"

The THIRD approached the animal,
and happening to take
The squirming trunk within his hands.
Thus boldly up and spake:
"I see " quoth he, "The Elephant
Is very like a snake."

And FOURTH reached out an eager hand,
And felt about the knee,
"What most this wondrous beast is like
is mighty plane," quoth he;
"'Tis clear enough the Elephant
Is very like a tree."

The FIFTH, who chanced to touch the ear,
Said: "E'en the blindest man
Can tell what this resembles most;
Deny the fact who can,
This marvel of an Elephant
Is very like a fan!"

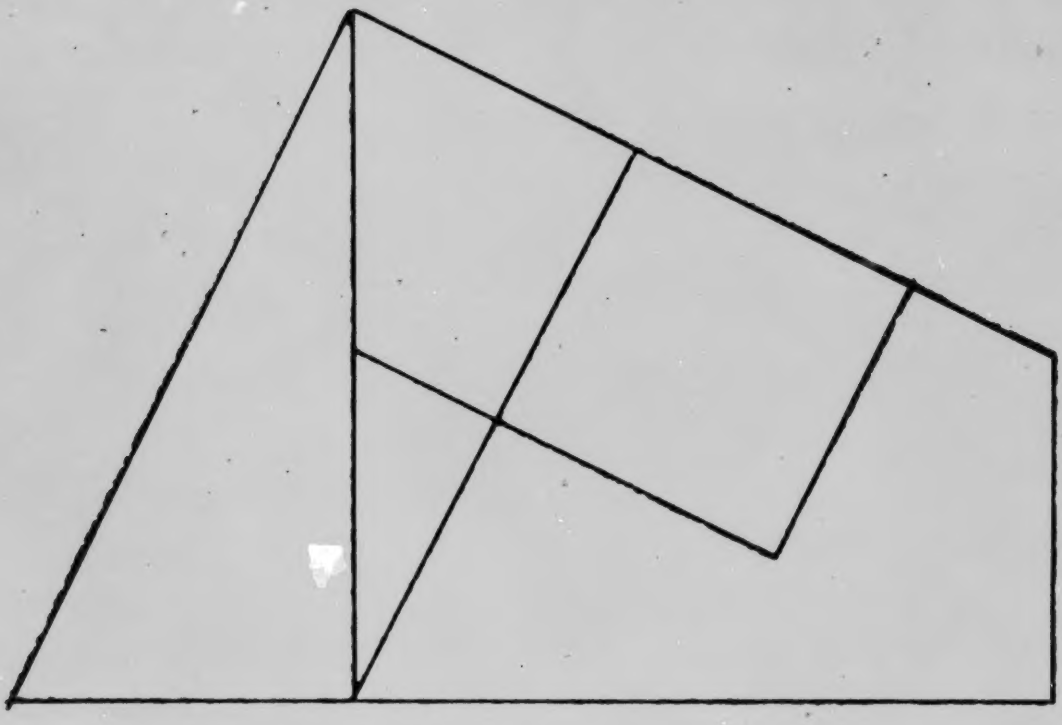
The SIXTH no sooner had begun
About the beast to grope,
Than, seizing on the swinging tail
That fell within his scope,
"I see," quoth he, "the Elephant
Is very like a rope."

And so these men of Indostan
Disputed loud and long.
Each in his own opinion
Exceeding stiff and strong,
Though each was partly in the right,
And all were in the wrong!

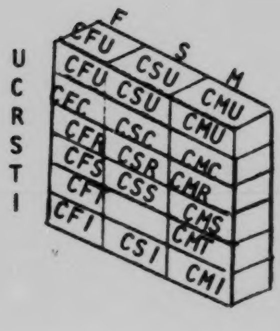
DUAL PUZZLE

CUT OUT THE FIVE SHAPES BELOW. CAN YOU ARRANGE THESE FIVE PIECES TO FORM EACH OF THE FOLLOWING:

1) A SQUARE
2) A CROSS
3) A RECTANGLE
4) A TRIANGLE



From Pic-A-Puzzle by Schadler-Seymour, page 97. c. 1970 Creative Publications, Palo Alto.

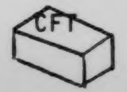


Recommended for Grade 6 only.

Concept Cognition

Curricular Objective

1.14 The student will develop his ability to visualize changes in objects.



Input

Discuss how we can visualize things in our minds.

Discuss whether each child thinks in words, symbols, or pictures.

Discuss when visual thinking is used:

1. Making up plays in sports.
2. Reorganizing a room.
3. Deciding on what to buy.
4. Walking or riding in traffic.

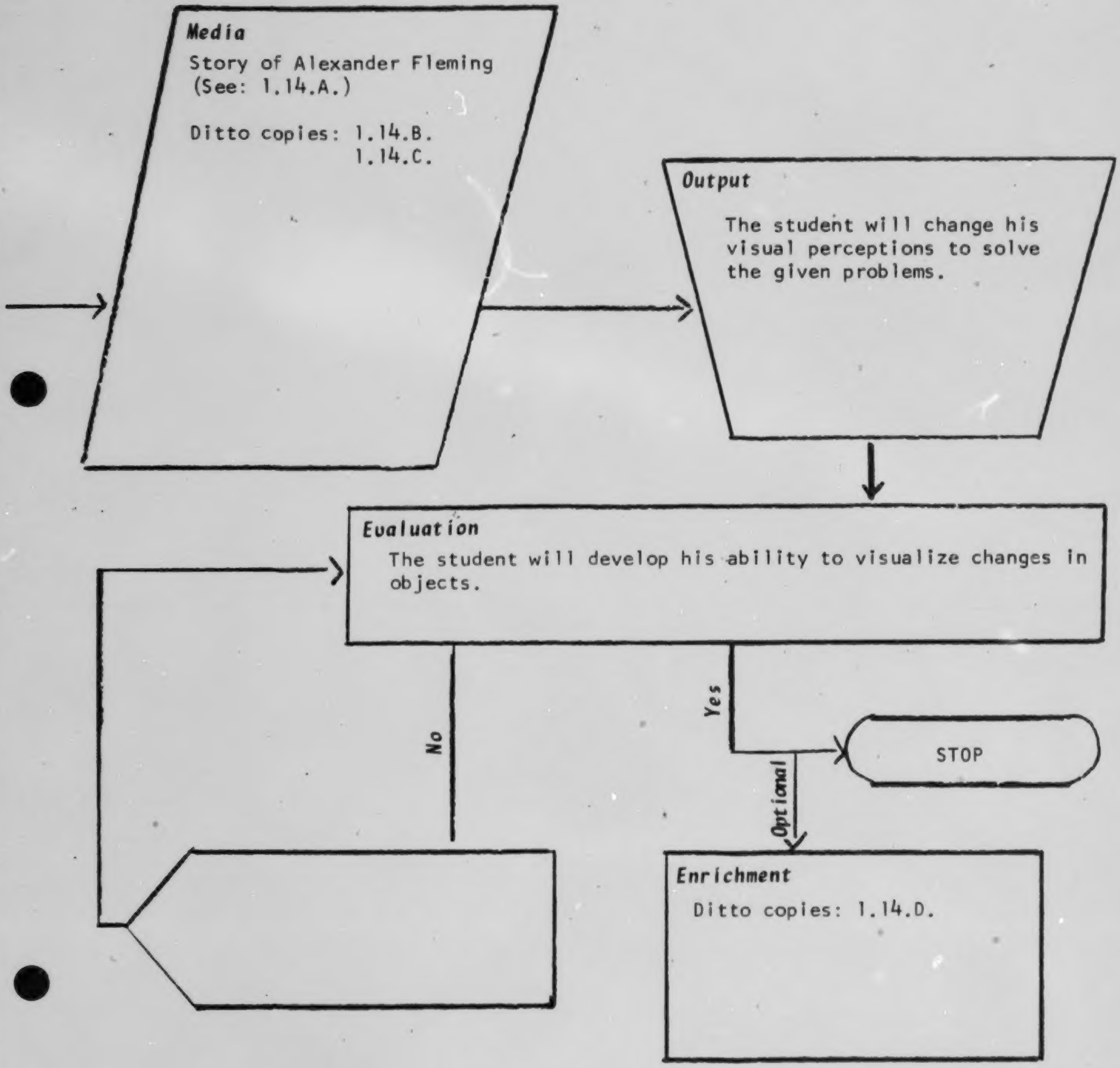
Learning Opportunities

I. Discuss the components of visual thinking:
   A. Perceiving a problem from several angles.
   B. Imagining many possible solutions.
   C. Sketching or doodling the possible solution.

II. Tell story of the visual thinking of Alexander Fleming (See: 1.14.A.)
   A. Discuss why Fleming didn't throw away his experiment as a failure.
   B. Discuss how Fleming changed his perception to make a discovery.

III. Ask children to use their perception and thinking at the same time.
   A. Distribute 1.14.B.
   B. Ask children to determine the card by eliminating the ones it could not be.
   C. Have the children vote on the correct card. (Answer: 4th card from left.)

IV. Discuss Altair Designs (1.14.C.)
   A. Explain that these were created to find out how many different things can be seen in them.
   B. Explain the designs were made to "shift" so they should look at it from many different angles.
   C. Let each child select a design and color in all the things he can see encourage him to keep changing his perception.


Media

Story of Alexander Fleming
(See: 1.14.A.)

Ditto copies: 1.14.B.
1.14.C.

Output

The student will change his visual perceptions to solve the given problems.

Evaluation

The student will develop his ability to visualize changes in objects.

No
Yes
STOP
Optional
Enrichment

Ditto copies: 1.14.D.

seeing and thinking

Discoveries in the direct context of seeing are common in the history of science. For example, Sir Alexander Fleming "was working with some plate cultures of staphylococci which he had occasion to open several times and, as often happens in such circumstances, they became contaminated. He noticed that the colonies of staphylococci around one particular colony had died. Many bacteriologists would not have thought this particularly remarkable for it has long been known that some bacteria interfere with growth of others. Fleming, however, saw the possible significance of the observation and followed it up to discover penicillin."

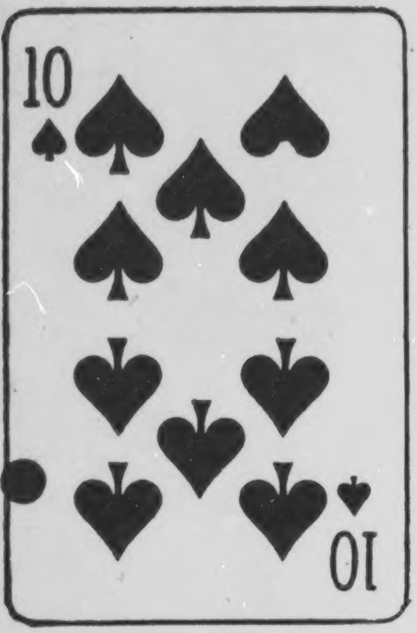
Why did Fleming discover penicillin when another scientist saw it and considered it only a nuisance? Because habits of seeing and thinking are intimately related. Fleming, like most creative observers, possessed a habit of mind that permitted him to see things afresh, from new angles. Also he was not burdened by that "inveterate tradition according to which thinking takes place remote from perceptual experience." He didn't look and then sit down to think, he used his active eyes and mind together.

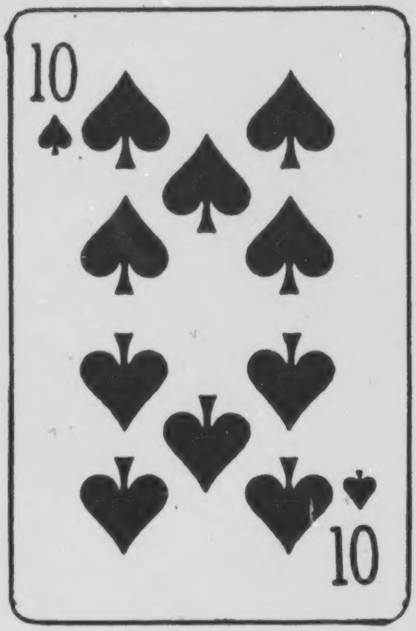
1.14.B.

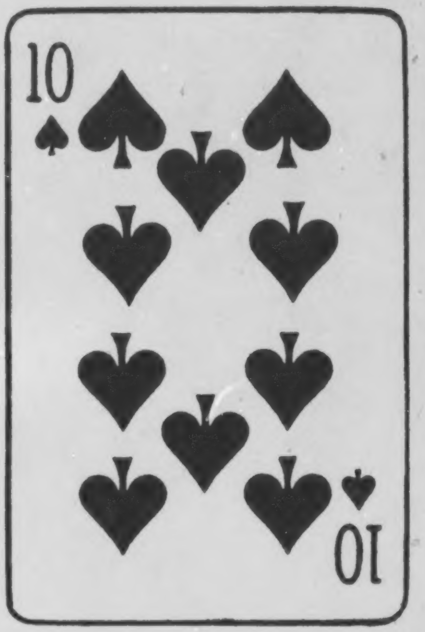
USE THE MIND'S EYE

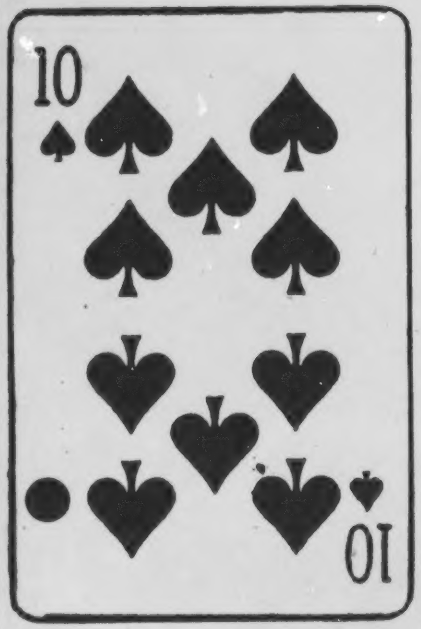
In the six cards below only one card is correct.

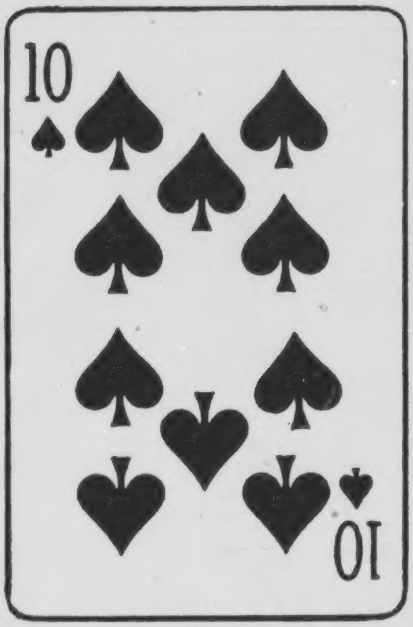
Using your mind and eyes together, find the mistakes in the incorrect cards - and correct the card.

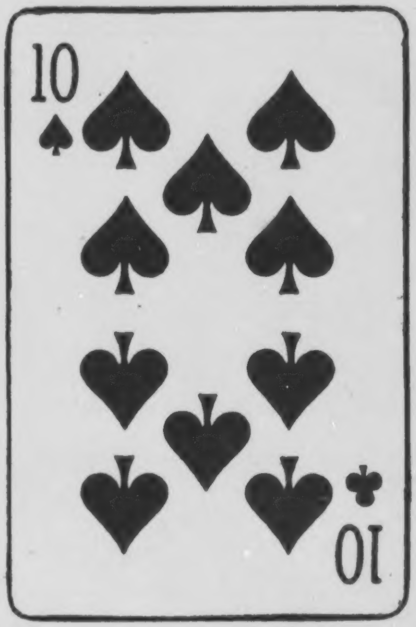




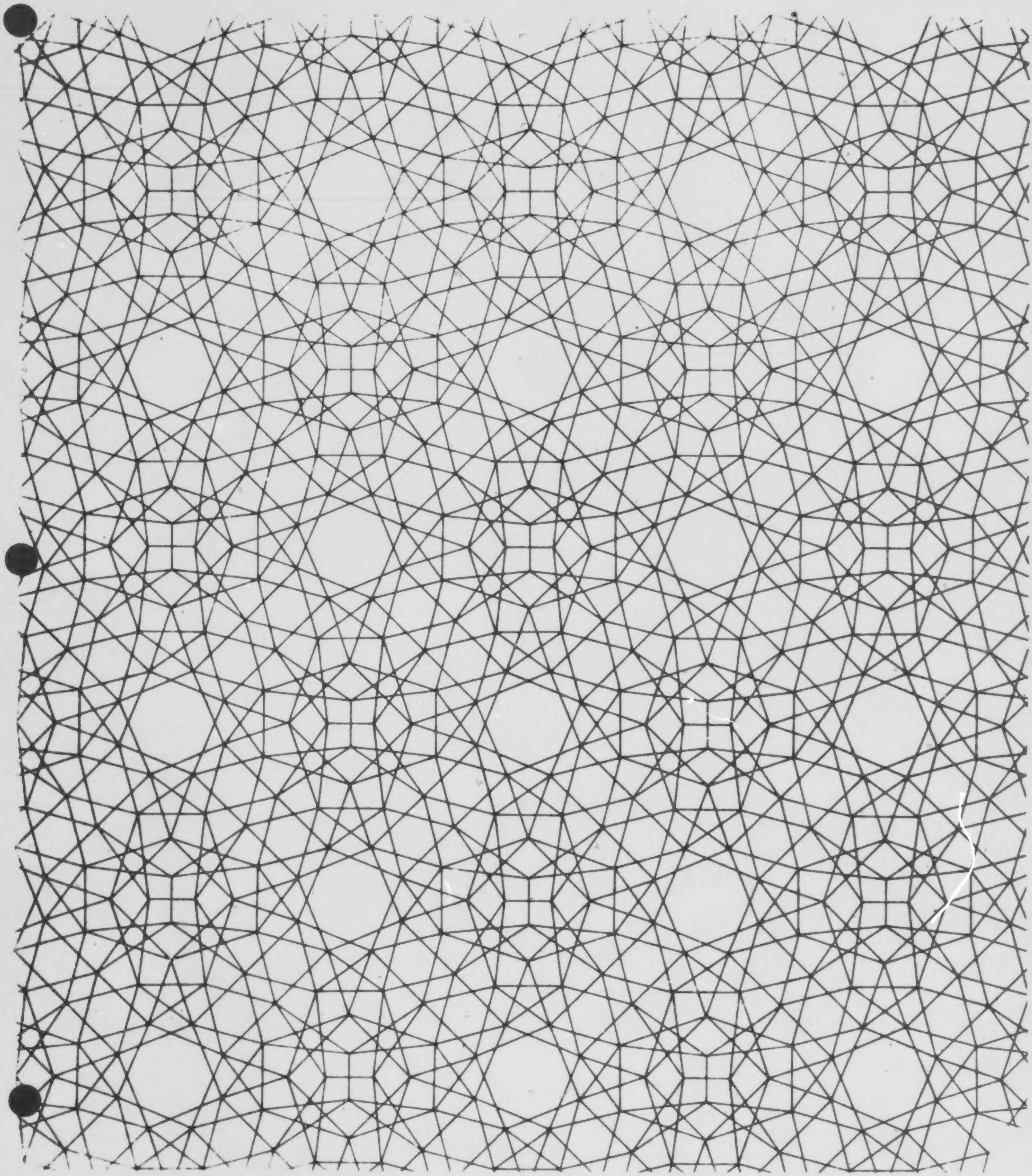






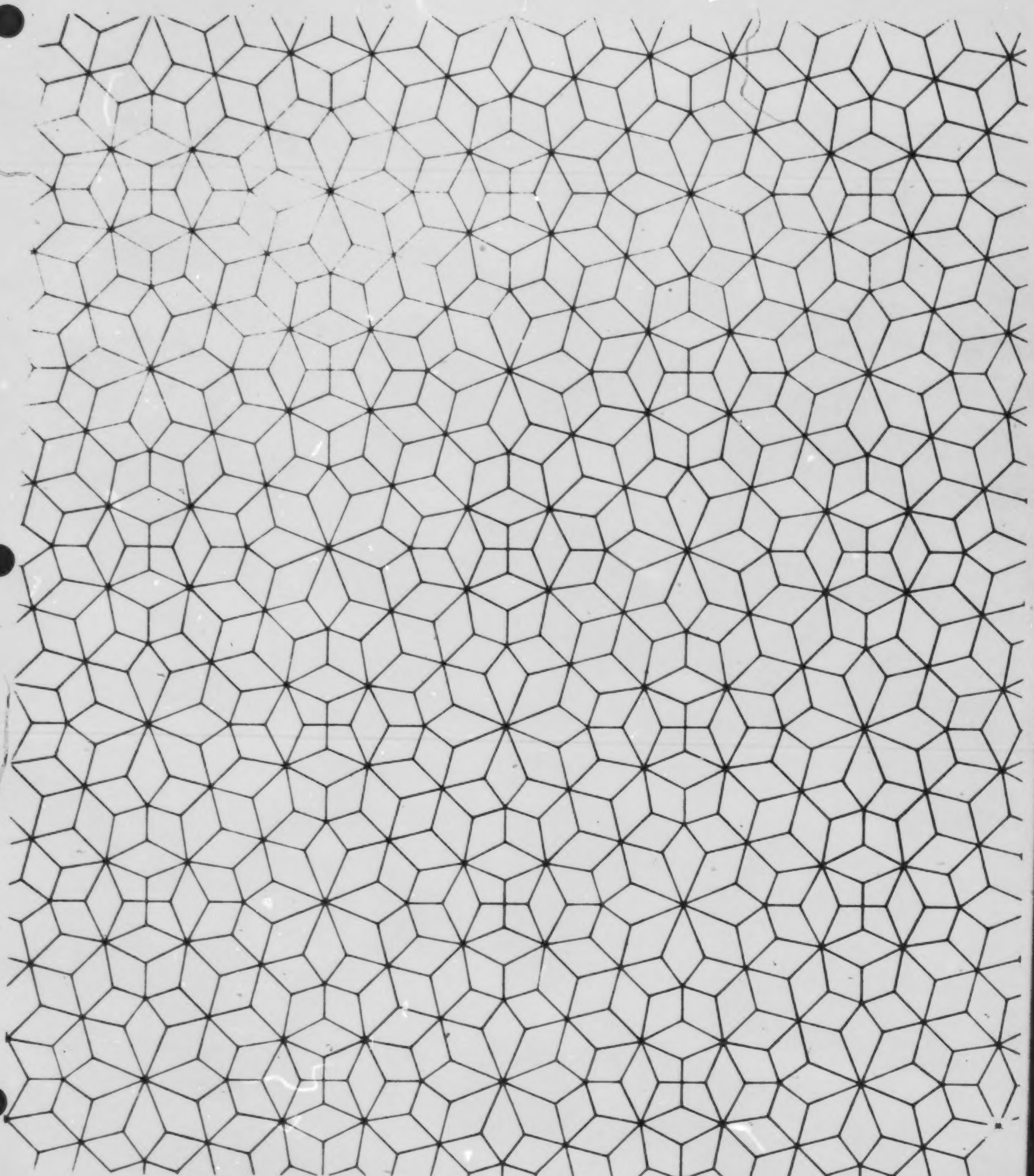


1.14.C.



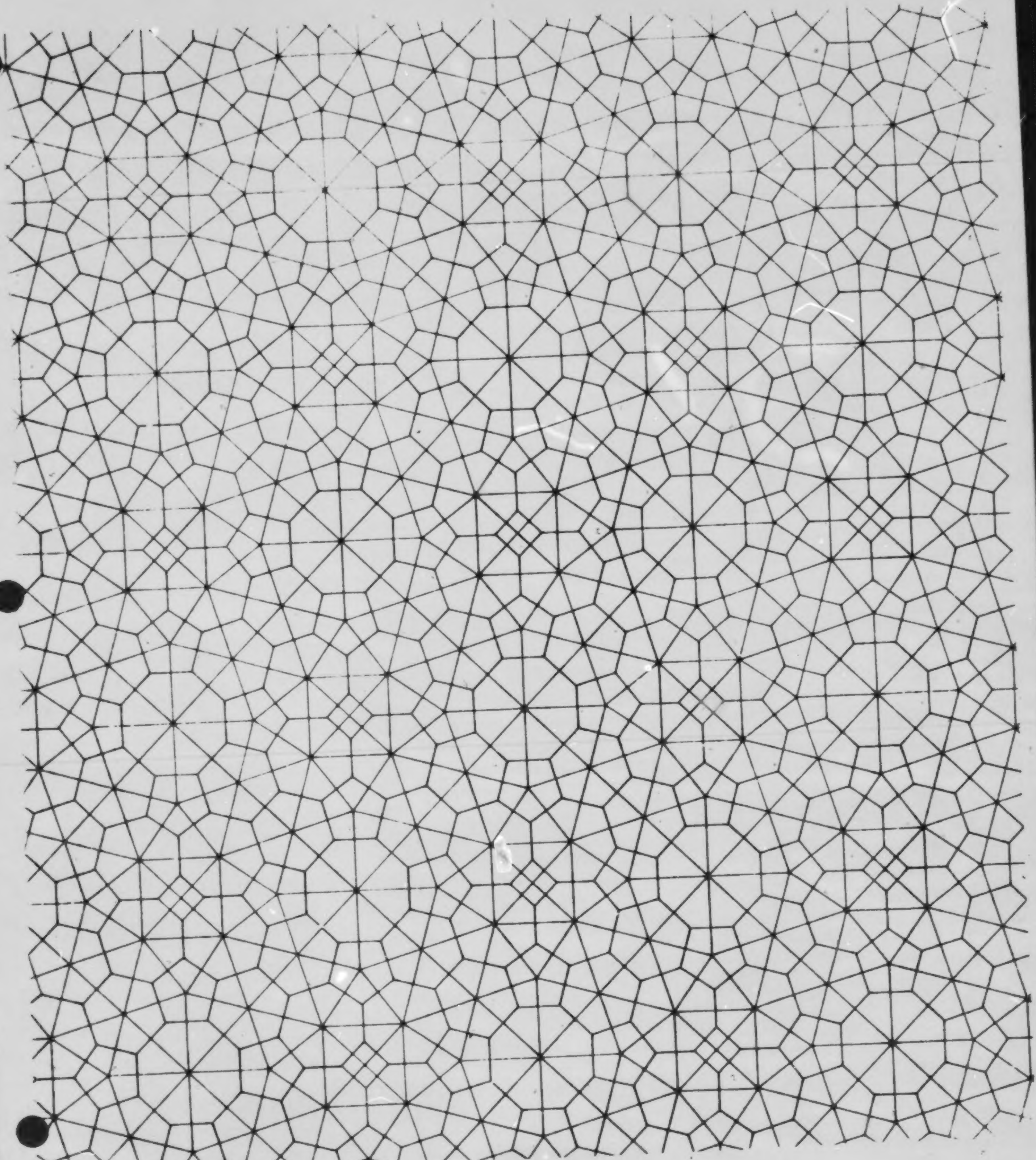
Altair Design published by Pantheon Books, a division of Random House.

1.14.C.



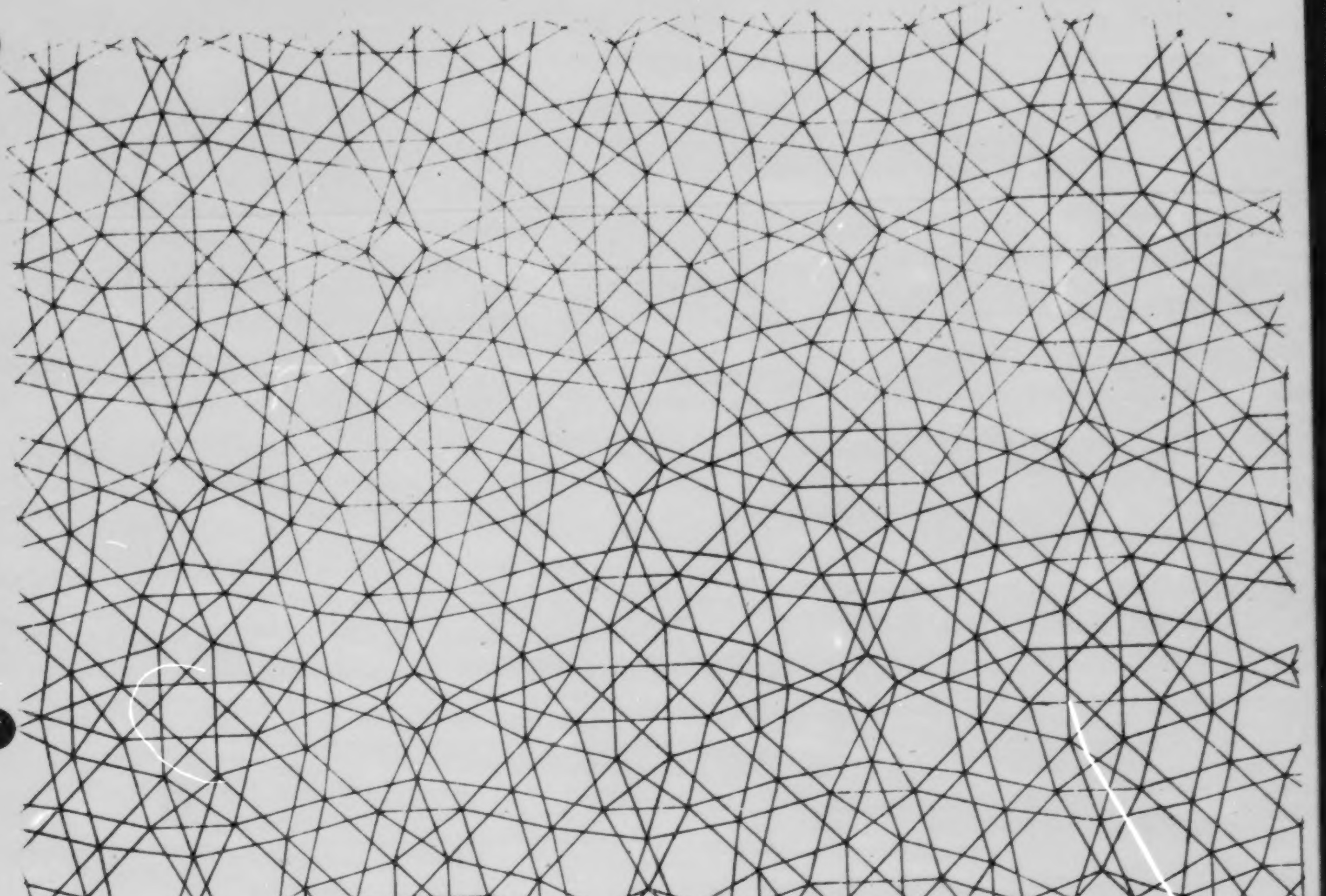
Altair Design published by Pantheon Books, a division of Random House.

1.14.C.



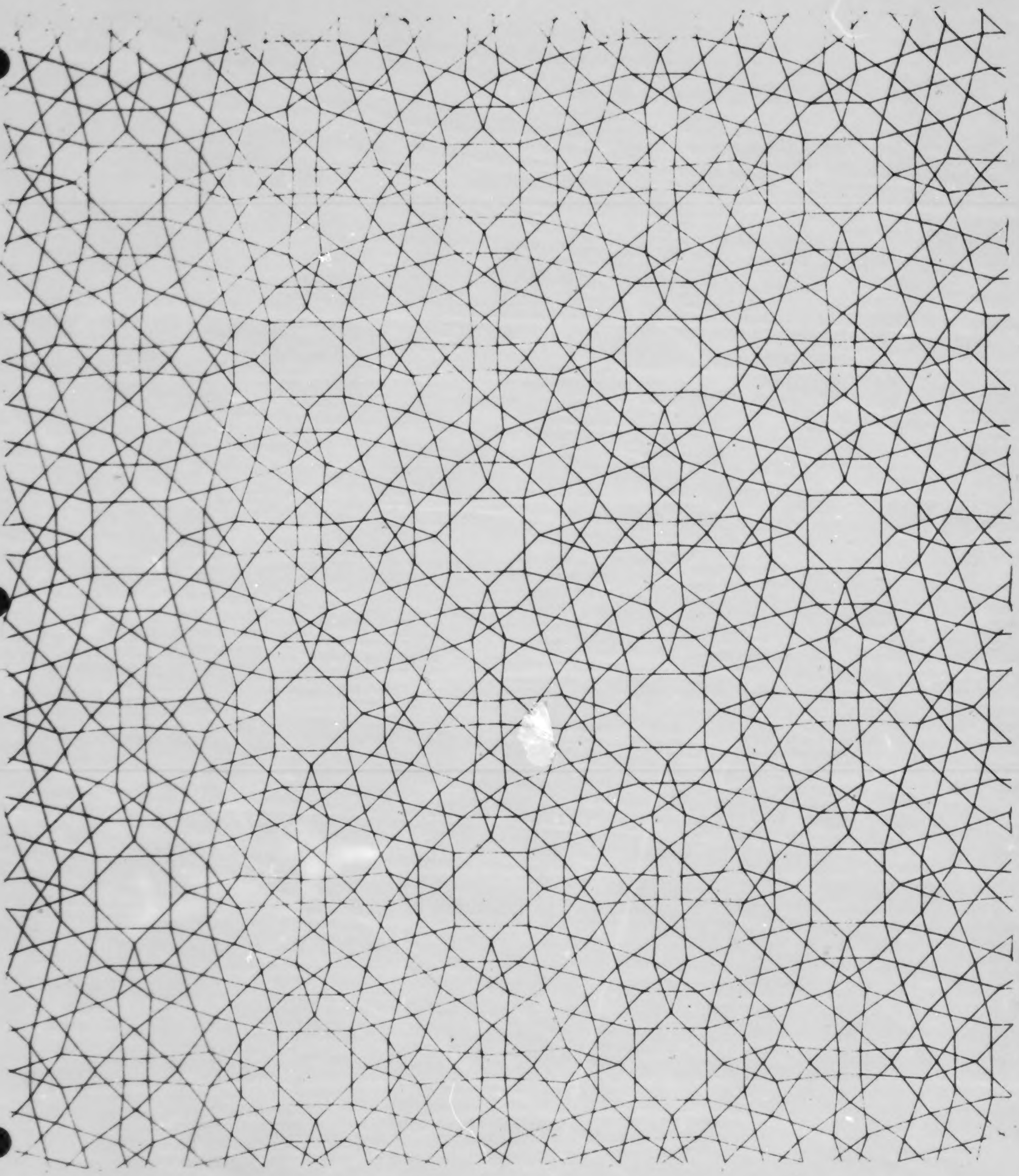
Altair Design published by Pantheon Books, a division of Random House.

1.14.C.



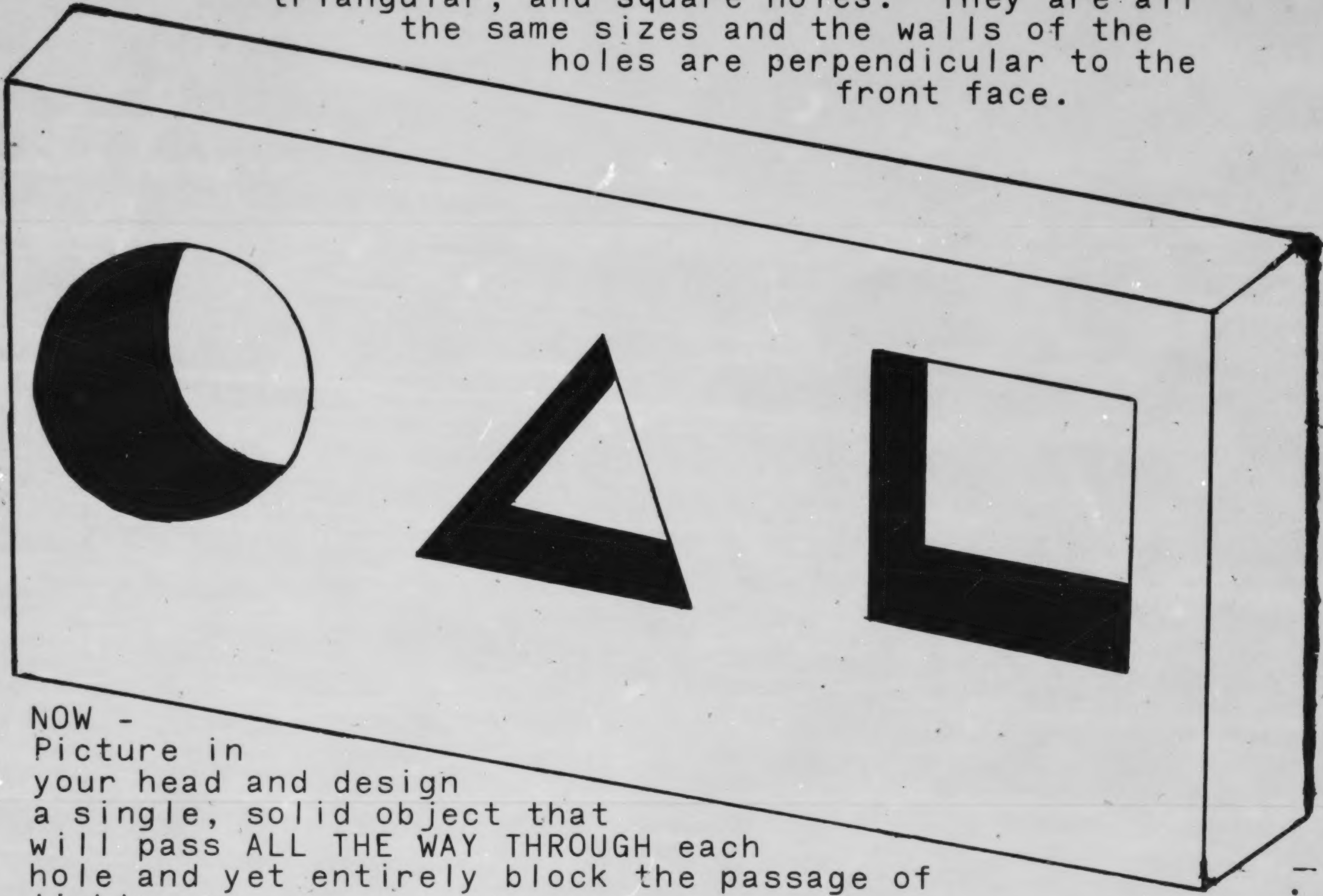
A [illegible]ir Design published by Pantheon Books, a division of Random House.

1.14.C.



Altair Design published by Pantheon Books, a division of Random House.

This solid block has been cut by circular, triangular, and square holes. They are all the same sizes and the walls of the holes are perpendicular to the front face.

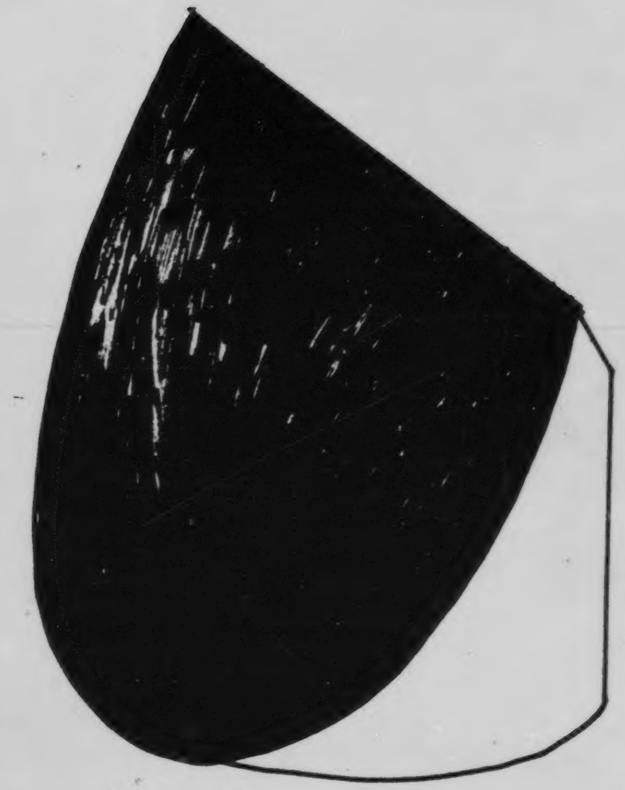


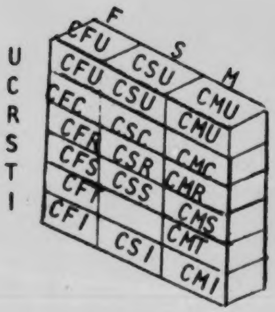
NOW -
Picture in your head and design a single, solid object that will pass ALL THE WAY THROUGH each hole and yet entirely block the passage of light.

THERE IS MORE THAN ONE WAY!!

Answers

Here's one of the many answers to this problem. Can you generate some of the others?



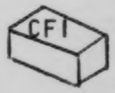


Recommended for Grade 6 only.

Concept Cognition

Curricular Objective

1.15 The student will try to visualize optical illusions as they really are in order to change their perception.



Input

Discuss illusions and what they are.

Discuss how the mind affects what we see.

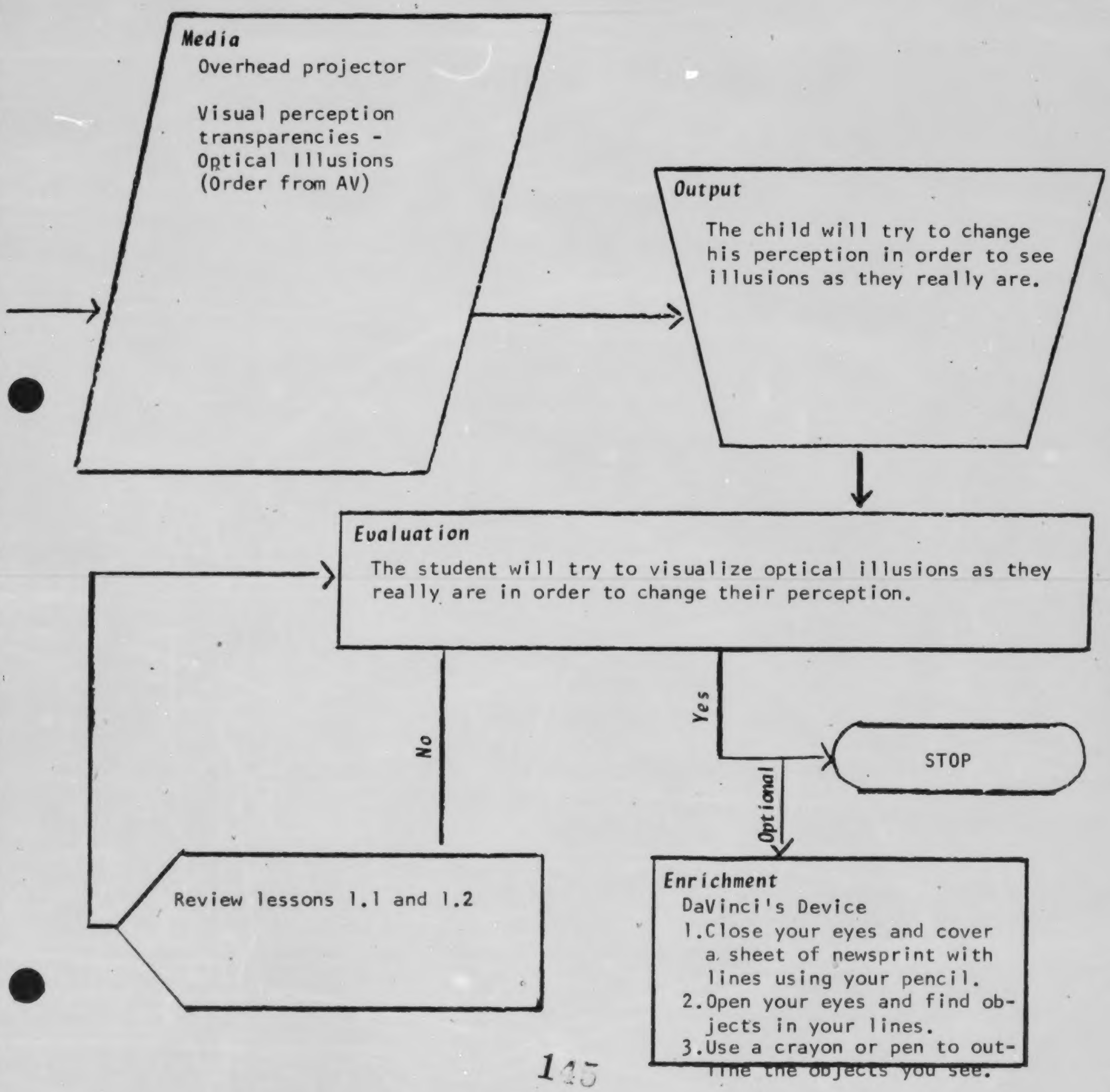
Discuss optical illusions and have the children tell how they are made.

Learning Opportunities

I. Discuss the part past experience plays in the way we view the things around us.
   A. Discuss ways to change our perceptions of things so we can see them in many ways or as they "really" are.

II. Show one optical illusion at a time. (Visual perception transparencies) For each transparency, follow this procedure:
   A. Have the children look at the illusions and tell what they see only.
      1. Ask them not to explain what they may be - only to tell what the illusions look like.
   B. Then show the children the "answer" and have them look at it.
   C. Finally, show the original illusion and have the children try to visualize the picture as it really is.
      1. See if they can change their perceptions and see it realistically.

III. Emphasize the point that knowing the way an object looks does not always change our perception of the object.



Media

Overhead projector

Visual perception transparencies - Optical Illusions (Order from AV)

Output

The child will try to change his perception in order to see illusions as they really are.

Evaluation

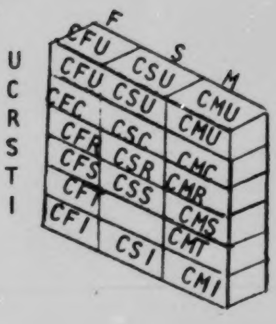
The student will try to visualize optical illusions as they really are in order to change their perception.

Review lessons 1.1 and 1.2

Enrichment

DaVinci's Device

1. Close your eyes and cover a sheet of newsprint with lines using your pencil.
2. Open your eyes and find objects in your lines.
3. Use a crayon or pen to outline the objects you see.

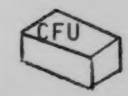


Recommended for Grade 6 only.

Concept Cognition

Curricular Objective

1.16 Given examples of visual discrimination the student will distinguish the correct items.



Input

Discuss the ability to perceive the differences in objects that to most people look alike.

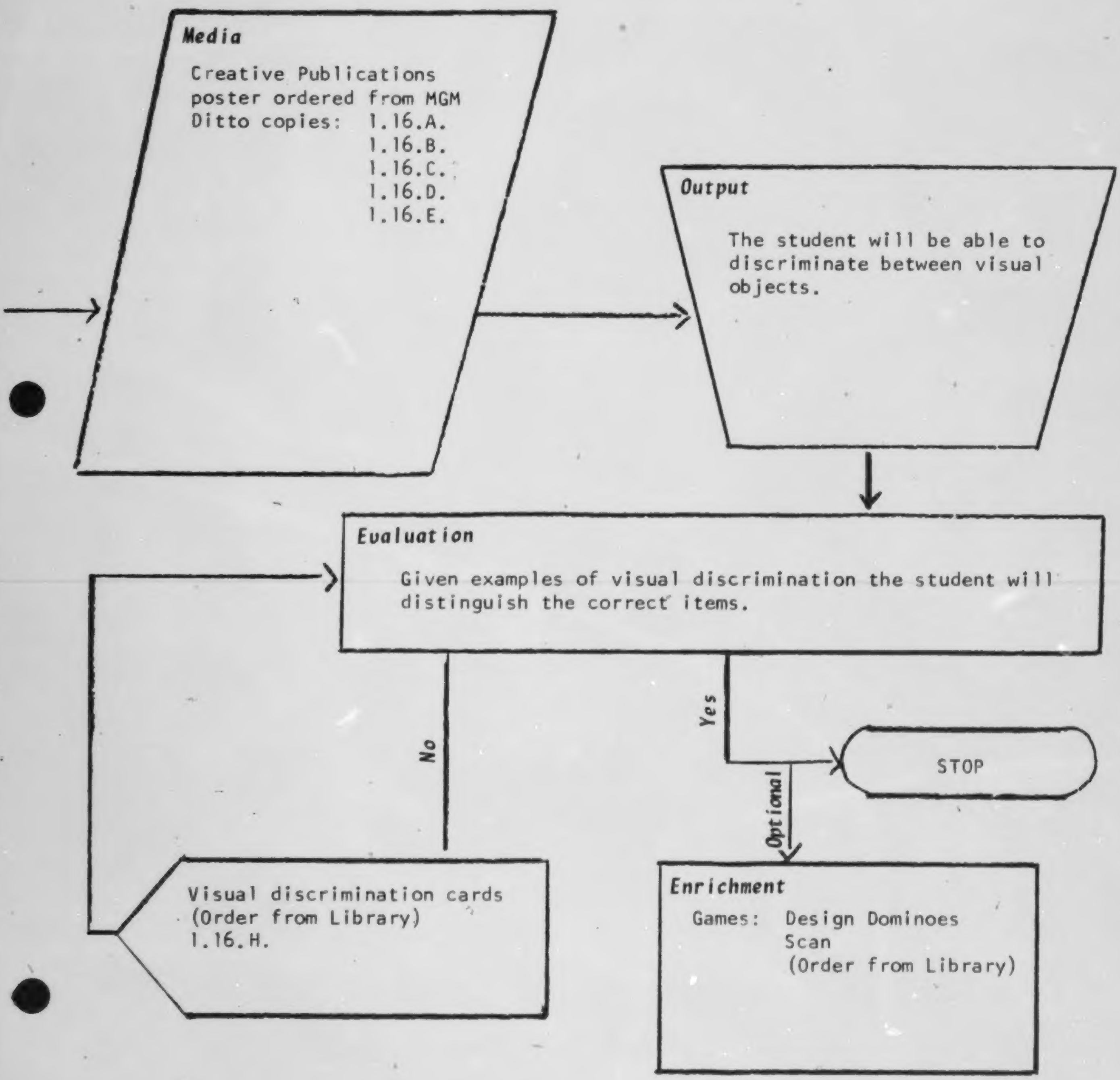
Discuss how people are trained to be more perceptive, by experiencing and using items that must be studied before an answer can be given.

Learning Opportunities

I. Show the children a poster where they must select the matching patterns (order a Creative Publications poster from MGM)
   A. Let the children vote on the correct answer and then explain which ones are correct.
   B. Ask those who answered correctly how they were able to find the answer.

II. Distribute copies of 1.16.A., 1.16.B., and 1.16.C., 1.16.D., 1.16.E., to the students
   A. They may work in groups or alone to try to discriminate between the visual examples.

III. Prepare an answer sheet and discuss the information given on 1.16.F., 1.16.G.


Media
Output
Evaluation
No
Yes
Optional
STOP
Enrichment

Media

Creative Publications
poster ordered from MGM
Ditto copies: 1.16.A.
1.16.B.
1.16.C.
1.16.D.
1.16.E.

Output

The student will be able to discriminate between visual objects.

Evaluation

Given examples of visual discrimination the student will distinguish the correct items.

Visual discrimination cards
(Order from Library)
1.16.H.

Enrichment

Games: Design Dominoes
Scan
(Order from Library)

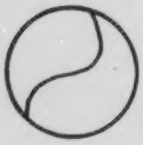
1.16.A.

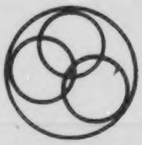
CHECK YOUR PERCEPTION

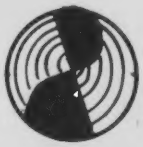
1. OBSERVATION -

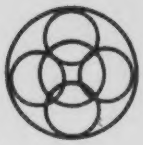
Look at the figure on the left-hand side. Now see if you can find that figure hidden in the drawings on the right.

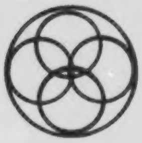
Circle the figures you think hide the original figure.





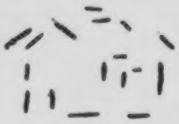


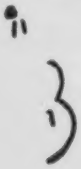


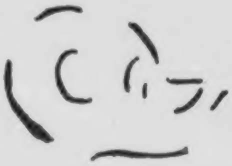


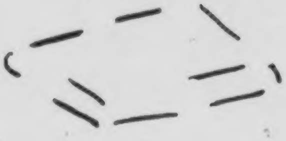
2. PICTURE THIS -

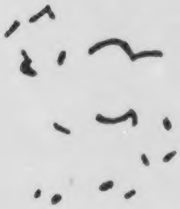
Below are some objects with their details missing.
Can you name what these objects are?







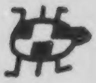


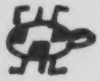


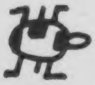
3. IDENTIFY AND MATCH

Look at the figure on the left - then match the one that matches it.

1.




A.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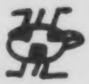
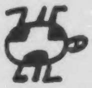
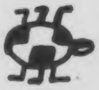
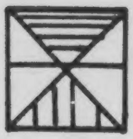
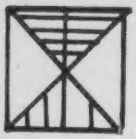

C.


D.


E.

2.

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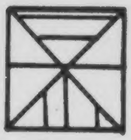
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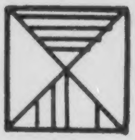
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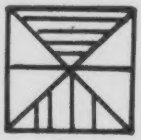
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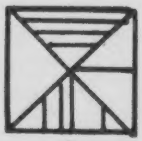
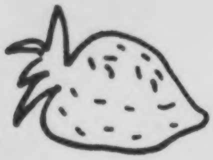
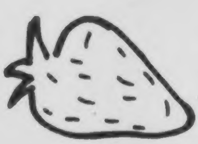
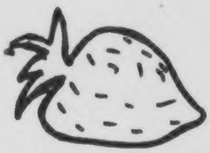

E.

3.




A.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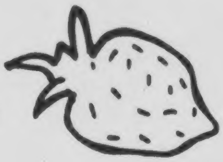
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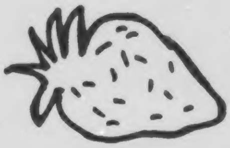
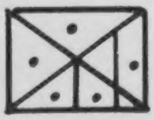

D.

4. CLASSIFY

Two figures in each row are exactly alike. Put a check by these figures.

a.


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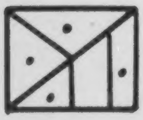

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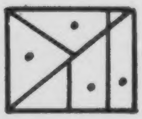

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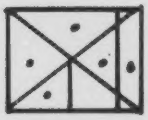
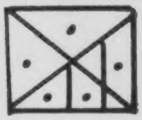


e.


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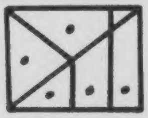
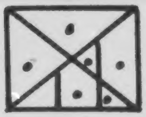
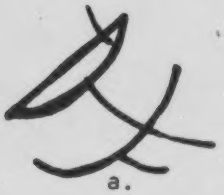


g.
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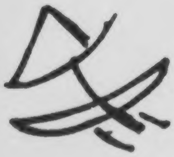
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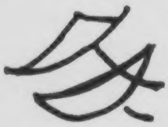
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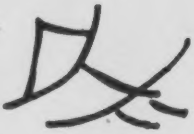
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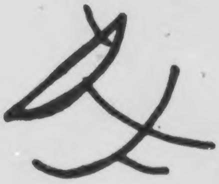
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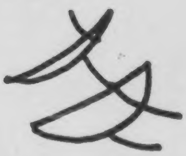
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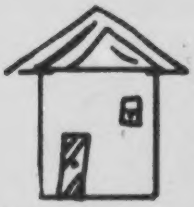
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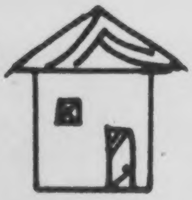
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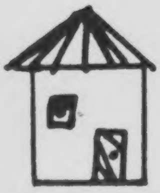
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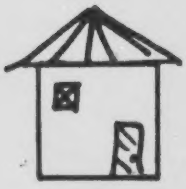
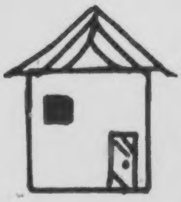
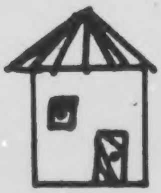
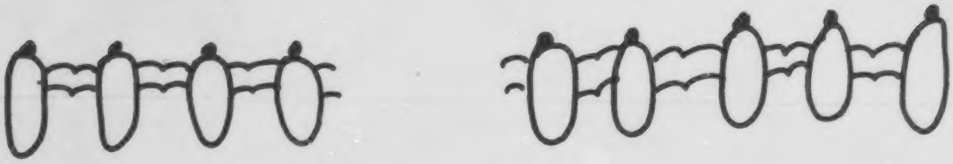


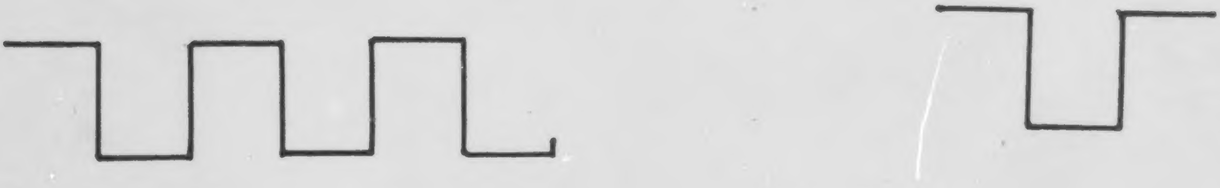

e.

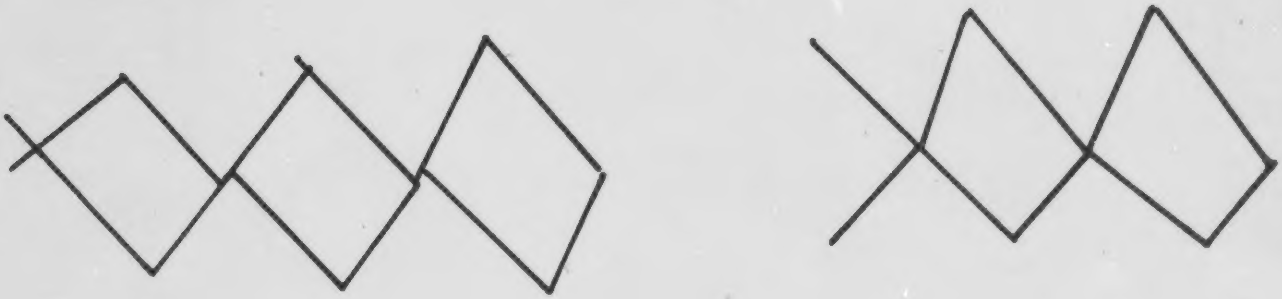


5. PATTERNS -

Complete the patterns below:

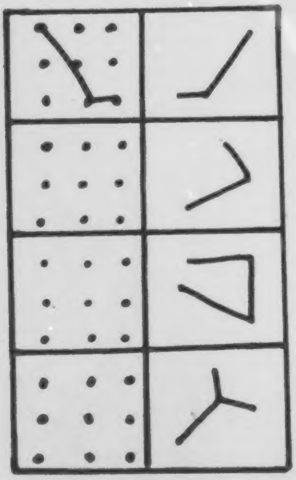






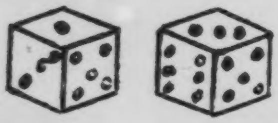
6. REVERSE -

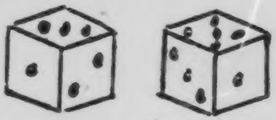
The top figure on the left is the reverse of the right drawing.
Draw the reverse of each drawing:

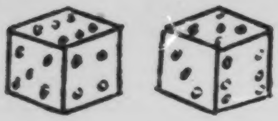


7. ROTATION -

Examine each pair of dice. If you think the first die can be turned into the position of the cube opposite, put a check.

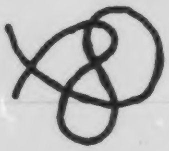


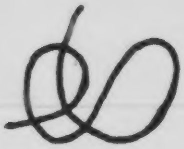


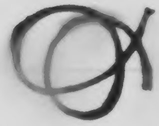


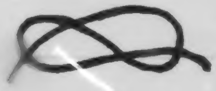
8. VISUALIZE -

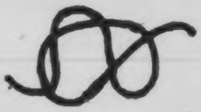
Circle the strings that would make a knot if the ends were pulled.





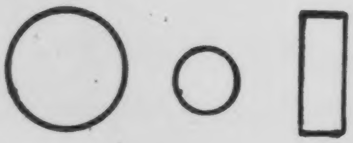






9. ANALOGY -

Which figure on the right completes the relationship you see on the left?



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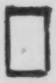
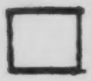
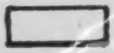


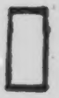
A



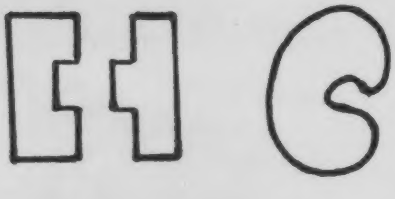
B

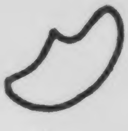


C

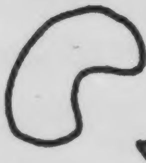


D





A



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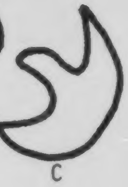
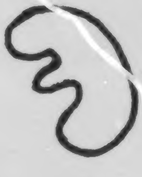


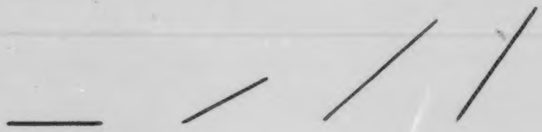
C

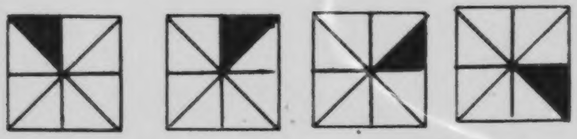


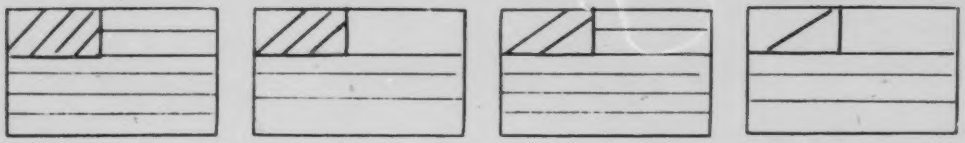
D

10. INDUCTION -

Look at the series on the left - then draw what would come next.

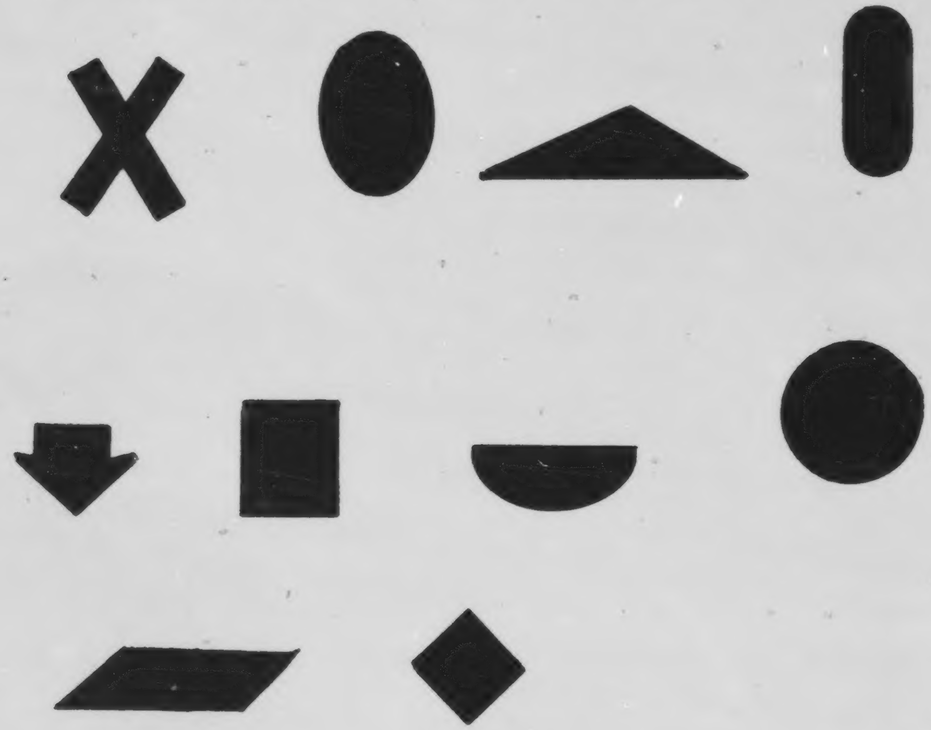






11. MEMORY -

Study these shapes for two minutes.
On a separate paper draw as many as you remember.



ANSWERS

1. The ability to see one pattern within another is necessary to develop original designs and to observe things closely. You should see the basic pattern in numbers 2 and 4. (If a child can explain and diagram number so it fits correctly, give him credit.)

2. Perception is an active, pattern-seeking process and is important to the act of thinking. Just as you tried to find a pattern in number 1, here you get "closure." You may be able to supply the missing detail in your mind due to having seen these objects in the past. Your mind completed the closure of an incomplete figure.
   Answers: house, violin, tape dispenser, book, camel.

3. The correct answers are: C, D, B
   If you could match these correctly, you looked for patterns. If you can do these quickly you have seen the pattern as a whole.

   The long way involves detailed comparison and perhaps talking to yourself. The computer uses this method and is a slow visual thinker. A computer takes great effort to perform operations that humans can perform effortlessly.

4. This operation is more difficult because it establishes categories for separating items. A computer must be programmed to gain the ability to classify, but this is a routine matter for the human mind. How easy was it for you?
   Answers: a and e, a and e, c and f

5. Activities involving drawing shows how actively you seek patterns. To draw the required image your mind and eyes have to work together to "see" it correctly.

6. Rotating objects in your mind is more difficult. You have to use imagination and base it on what you see.

7. A three dimensional object is even harder. You have more areas to think about and consider.

   If you checked the first pair of dice, you rotated the dice correctly.

8. You had to move a piece of string in space in your mind. This is very difficult and requires you to form the image in your mind.

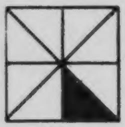
   The knots are: B, C, E

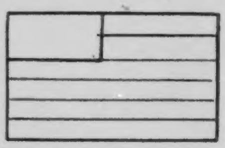
9. Logical reasoning can use visual thinking as much as verbal or mathematical thinking. Putting objects together from an idea presented is used by the artist and inventors to create new ideas.

To answer correctly, you should have: D and C.

10. Picturing images can become more complicated as in this activity. Based on a pattern of what you have seen, you are asked to visualize what would come next.

The answers are: 1,

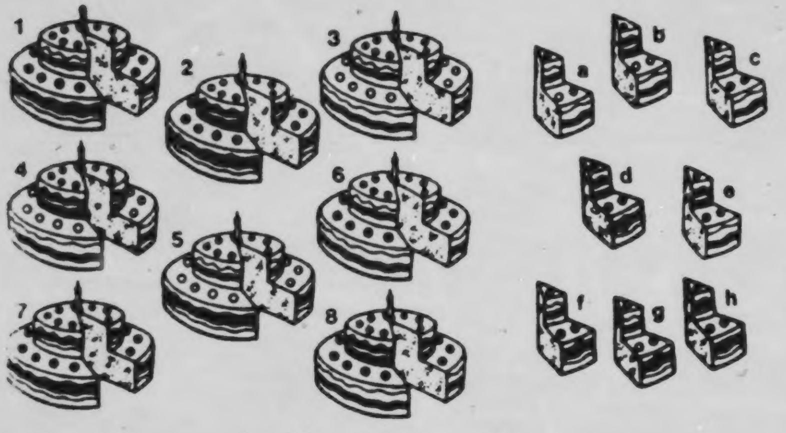




11. The ability to remember what you have seen is hard to measure. A poor memory may be the result of inaccurate perception. In fact, active perception and a faithful memory are closely tied together. The more actively you perceived these figures the better you remembered them.

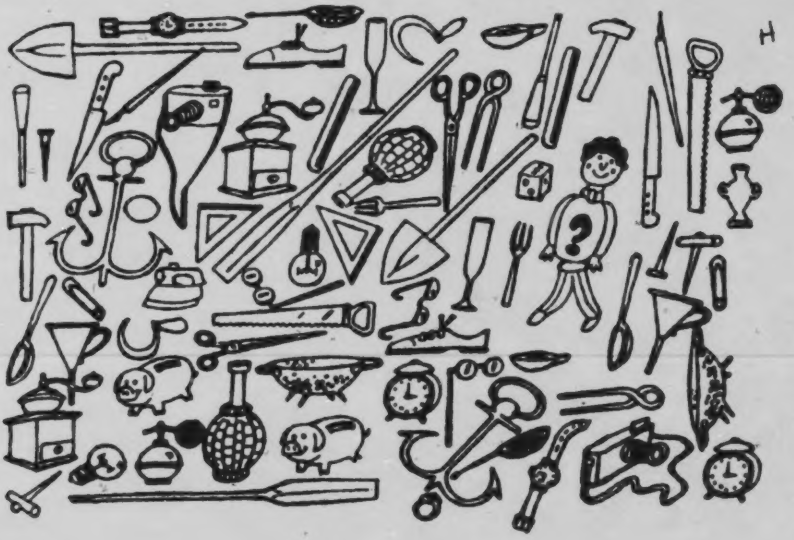
21. *A PROBLEM THAT TAKES THE CAKE*

A baker's apprentice has prematurely taken a slice from each of the birthday cakes which to reassemble is the new baker's problem, and *yours!*



25. *CAN YOU SEE TO THE BOTTOM OF THIS MYSTERY?*

This is a test for your ability to see through a very complicated arrangement: Can you tell WHO (the mystery person indicated by a question mark) might have taken this "snapshot" of various objects? By way of a clue, we will tell you that all the objects BUT FIVE can be found in duplicate. You can check yourself in this test—for which you are allowed eight minutes—by spelling out the profession of the mystery man from the initials of the five lone objects.



H

1.16. H.

From Sharpen Your Wits, Gerald Mosler. Doubleday Company, 1971.

ANSWERS

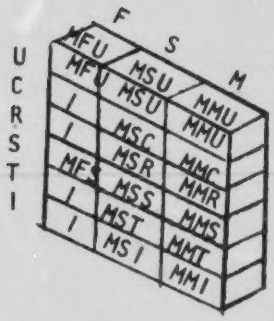
1.16.H.

A PROBLEM THAT TAKES THE CAKE

1-F, 2-D, 3-A, 4-B,
5-G, 6-C, 7-H, 8-E

CAN YOU SEE TO THE BOTTOM OF THIS MYSTERY?

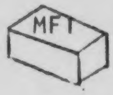
D-I-V-E-R Single objects:
Die-Iron-Vase-Egg-Ring



Concept Memory

Curricular Objective

2.1 The student will analyze his ability to recall a familiar object.



Input

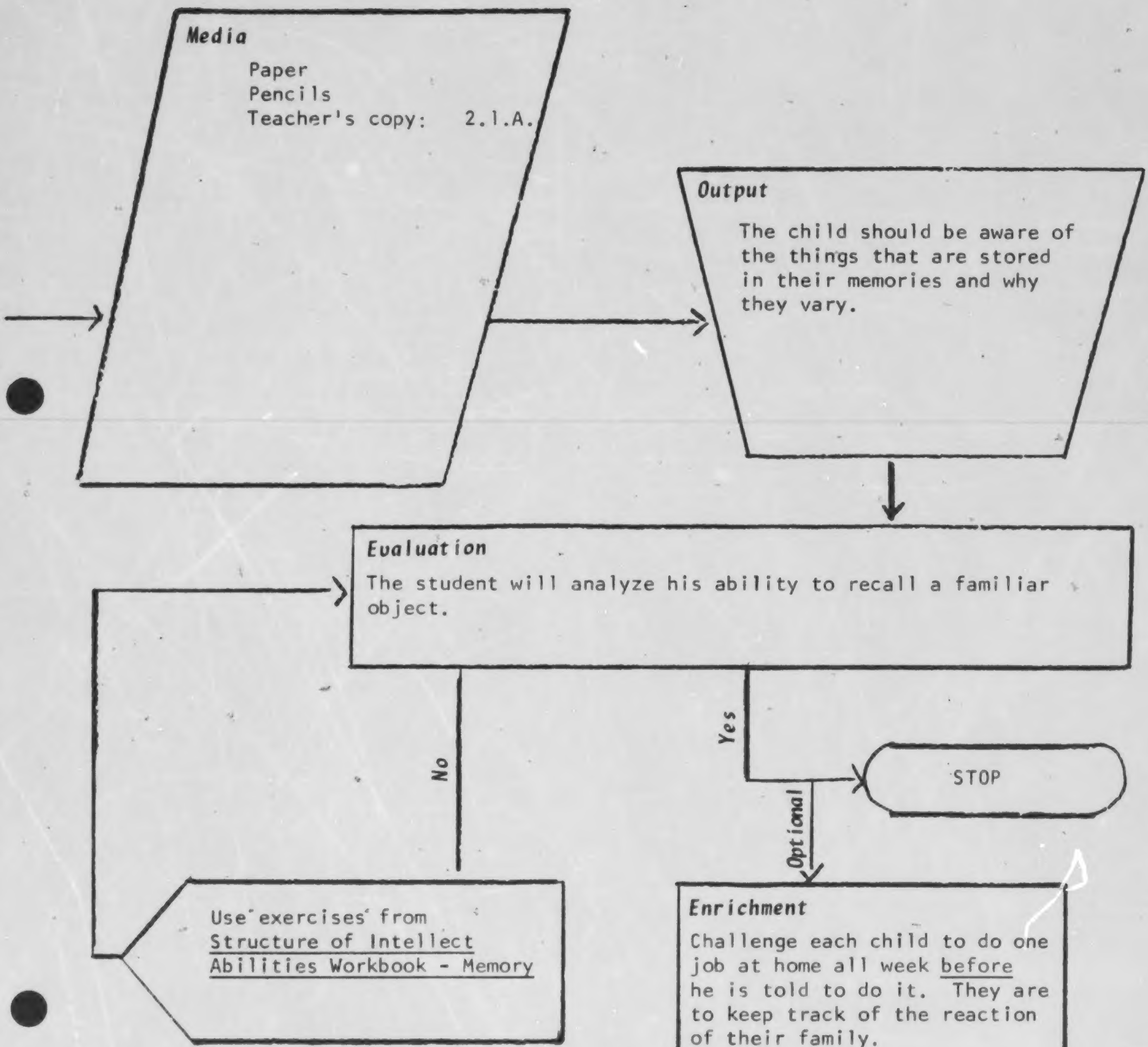
Discuss memory -
  1. What things we remember.
  2. What things we forget.

Have the children formulate theories as to why they remember.

Learning Opportunities

I. Tell the children they will be able to check their memories by the questions they will be given.
  A. Each child answers on paper the questions the teacher selects to read aloud (See: 2.1.A) The teacher should read about 10 of the questions to the children.
  B. Let the children grade their own papers.
  C. Then discuss what kinds of things they remember, such as:
    1. Things from their own experience.
    2. Things they've seen or read.
    3. Things learned in school.

II. Discuss the difference between instant recall and long term memory.



Media

Paper
Pencils
Teacher's copy: 2.1.A.

Output

The child should be aware of the things that are stored in their memories and why they vary.

Evaluation

The student will analyze his ability to recall a familiar object.

Use exercises from Structure of Intellect Abilities Workbook - Memory

Enrichment

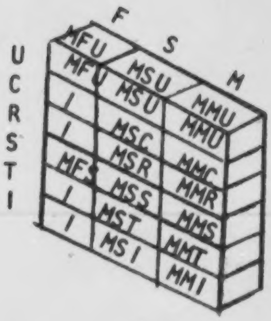
Challenge each child to do one job at home all week before he is told to do it. They are to keep track of the reaction of their family.

2.1.A.

MEMORY QUIZ

(Teacher selects 10 to read out loud)

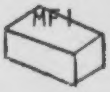
1. Which shoe do you put on first in the morning?
2. Does your front door open toward or away from the house?
3. What did you have for dinner last Saturday?
4. What is the date of the next birthday in your family?
5. When did you last go to the show?
6. How many times do you remember to do your jobs at home each week? How often are you reminded?
7. Who was President earlier - Lincoln or Grant?
8. On what continent is Berlin?
9. What states border California?
10. What English colony was settled first?
11. Who is on a nickel?
12. Who went with Merriwether Lewis on his expedition?
13. Where is the highest mountain in the world?
14. In what year was our last leap year?
15. What are the three branches of our government?
16. On whose land was gold discovered when the California gold rush began?
17. How many Great Lakes are there?
18. What is the largest city in the U.S.?
19. Name one famous: Irishman
    - Negro
    - Mexican
    - Indian
    - European



Concept Memory

Curricular Objective

2.2 The child will determine how accurately his perceptions are stored in his memory.



Input

Discuss the act of perception and how it varies between individuals.

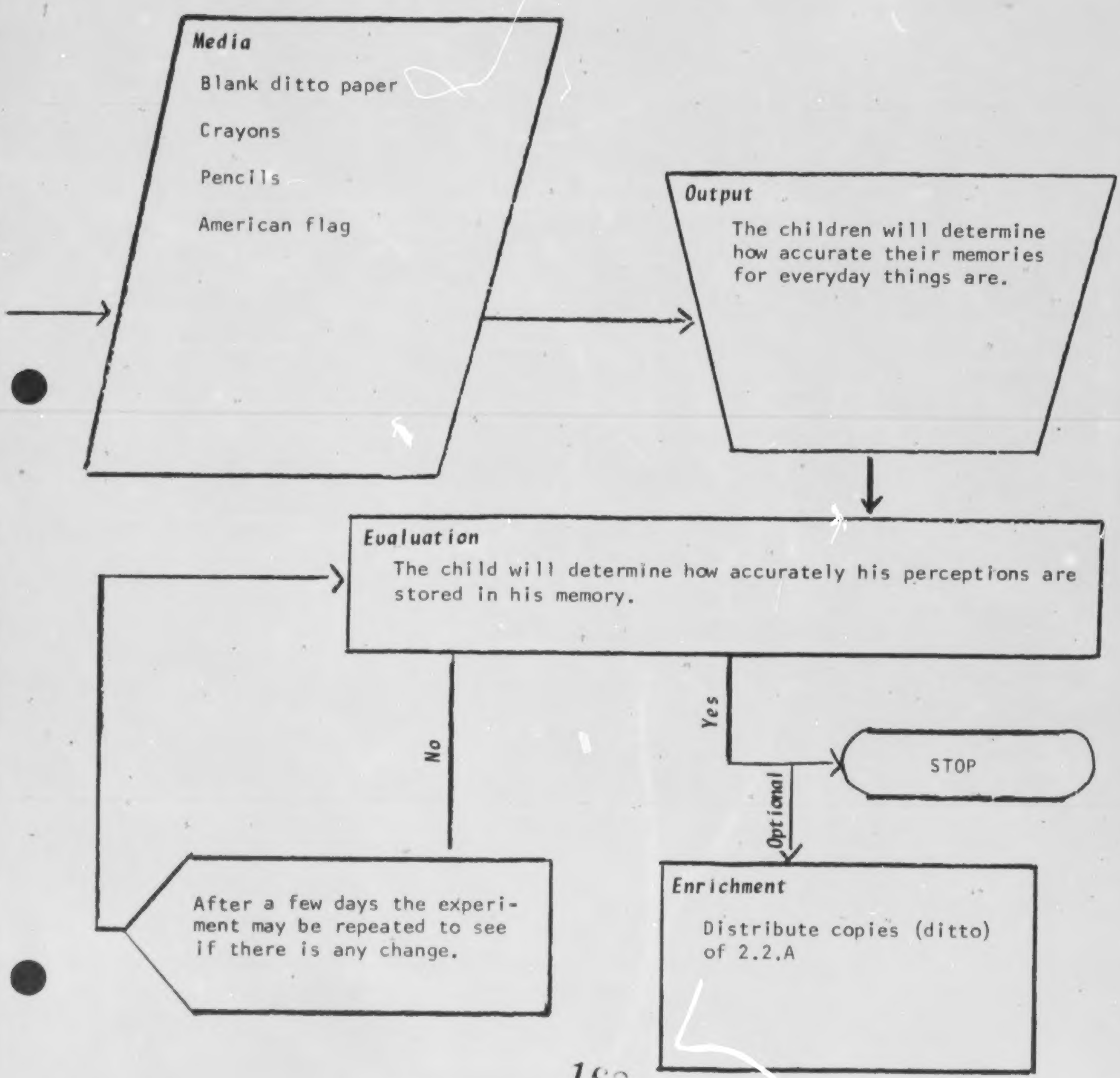
Discuss why memories are not always as accurate as we think they are.

Learning Opportunities

I. Put away the U.S. flag so the children can't see it.
  A. Discuss how well we remember the things we see each day.
    1. Ask if they remember things, such as:
      a. The color of their parents' eyes.
      b. How old a sister or brother is.
      c. A parent's middle name.

II. Give each child a blank sheet of ditto paper and ask him to draw something he sees every day - the American flag.
  A. Dots may represent the stars.
  B. The pattern of the flag should be as accurate as the child can draw it.
  C. The flag should then be colored correctly.

III. When the children are finished have them go to the flag and see how accurately they remembered the patterns and the colors.
  A. Discuss what the difficulties were and what might cause them.



Media

- Blank ditto paper
- Crayons
- Pencils
- American flag

Output

The children will determine how accurate their memories for everyday things are.

Evaluation

The child will determine how accurately his perceptions are stored in his memory.

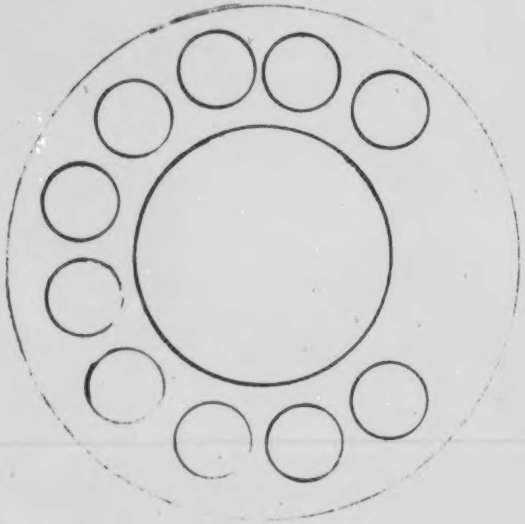
After a few days the experiment may be repeated to see if there is any change.

Enrichment

Distribute copies (ditto) of 2.2.A

TELEPHONE DIAL

Everyone uses the telephone and most of us use dial phones. Can you fill in the correct letters and the numbers in this dial? The answer to this test is given for New York City but you can check your own dial in case you do not live in New York.



Everday we see the same objects over and over again. Day in and day out, week in and week out, we are always looking at certain standard things yet we fail to observe them. How many questions can you answer correctly about the one-dollar bill or the five-dollar bill?

U. S. MONEY

1. Which way is Washington facing?
   a. to your right b. to your left c. neither

2. Which way is Lincoln facing on the five-dollar bill?
   a. to your right b. to your left c. neither

3. How many times does the figure 1 appear on the dollar bill?
   4 8 9 12 16

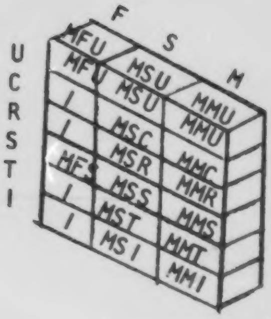
4. Where are the numbers of the bills located?
   a. upper right section c. lower right section
   b. upper left section d. lower left section

5. How many times does the word One appear on the dollar bill?
   4 8 9 10 11 12 16

6. Who is the treasurer of the United States?

7. What is pictured on the back of the five-dollar bill?

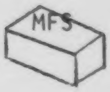
8. How many times does the word Five appear on the five-dollar bill?
   4 8 9 11 16 20


F
S
M
U
C
R
S
T
I
MFU
MFU
MSU
MSU
MMU
MMU
MSC
MSR
MMC
MMR
MFS
MSS
MMS
MST
MMT
MSI
MMI

Concept Memory

Curricular Objective

2.3 The student will observe an incident and demonstrate a memory of the event.



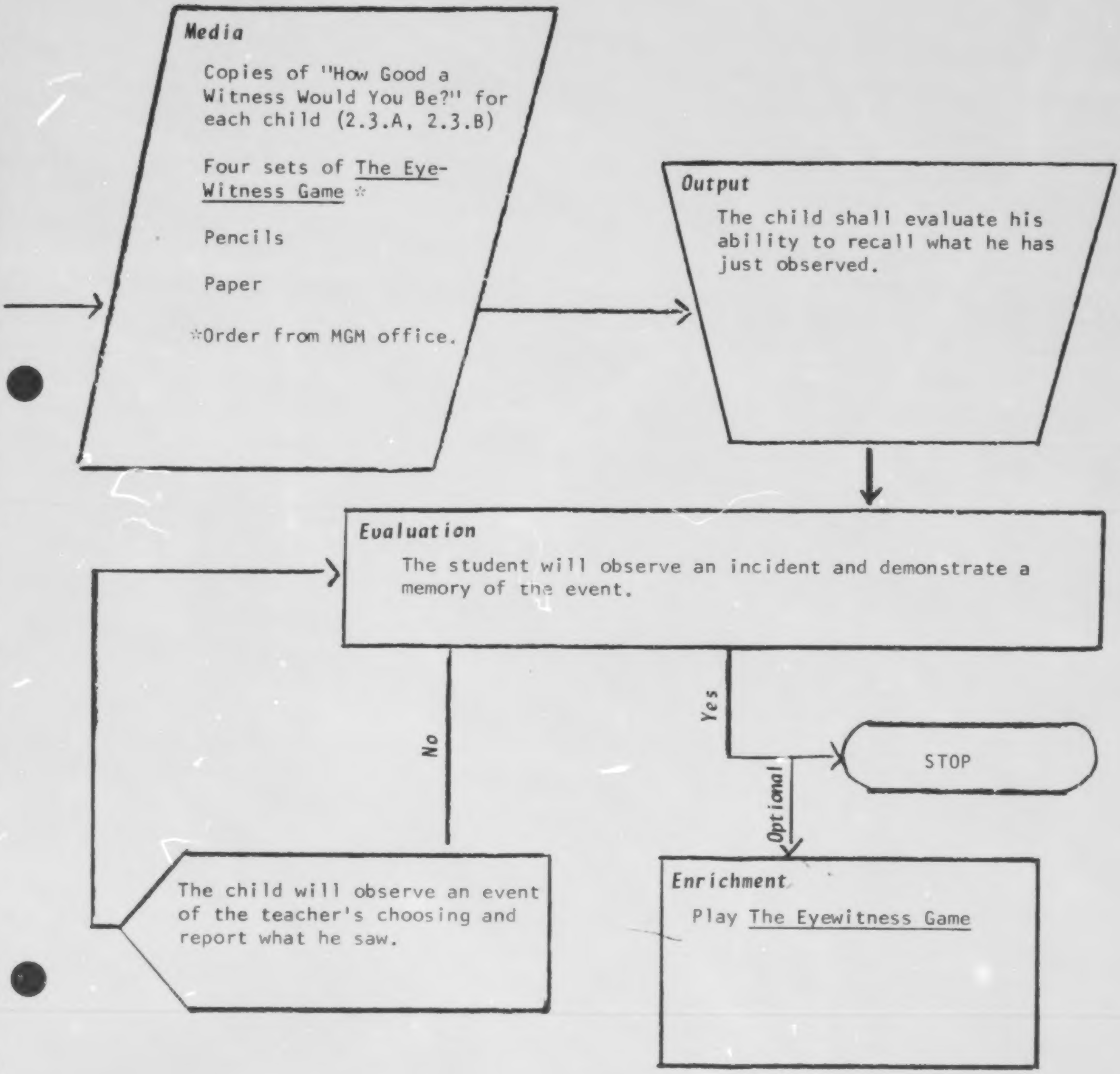
Input

Discuss the purpose of a witness at a trial.

Learning Opportunities

I. Each child will study the "How Good a Witness Would You Be?" scene (See: 2.3.A)
   A. Give each child a three-minute time limit.
   B. Have the child answer the questions having to do with the scene he just studied. (See: 2.3.B)

II. The child will play four rounds of The Eyewitness Game.
   A. He will keep a record of each round.
   B. At the end of four rounds he will analyze his scores and determine if improvements have been made.



Media

Copies of "How Good a Witness Would You Be?" for each child (2.3.A, 2.3.B)

Four sets of The Eye-Witness Game *

Pencils

Paper

*Order from MGM office.

Output

The child shall evaluate his ability to recall what he has just observed.

Evaluation

The student will observe an incident and demonstrate a memory of the event.

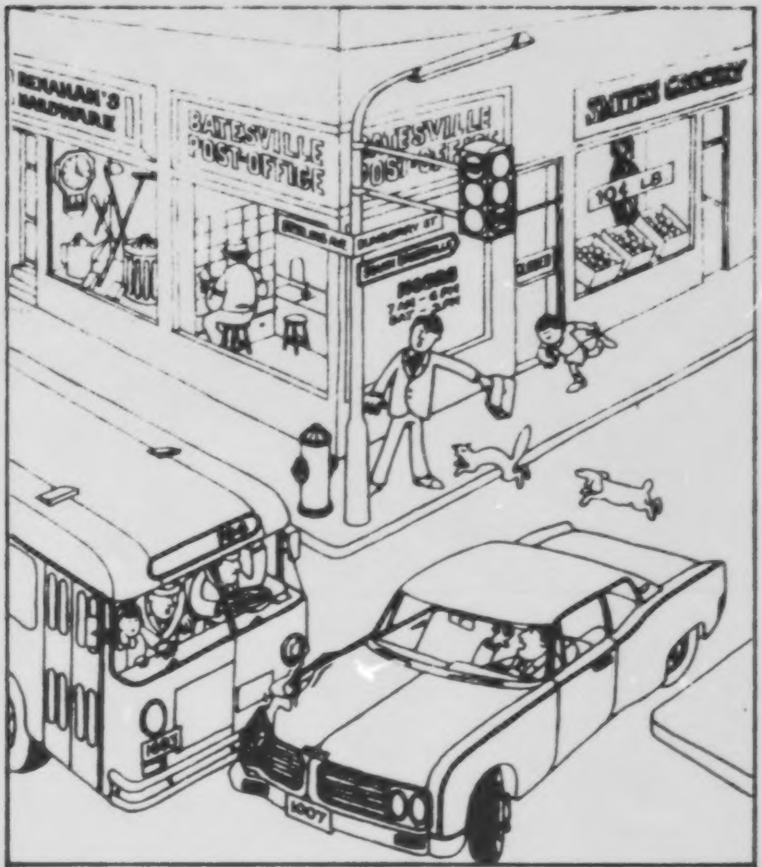
The child will observe an event of the teacher's choosing and report what he saw.

Enrichment

Play The Eyewitness Game

How Good a Witness Would You Be?

Dr George W Crane in Pittsburgh Post Gazette


BATESVILLE POST-OFFICE
10¢ LB
1607

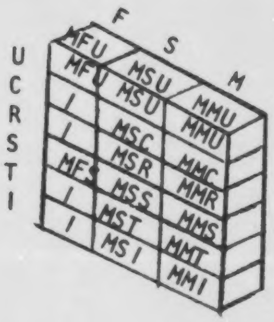
Study this picture carefully for three minutes . . . then turn to the questions at back of the book.

Reprinted by permission of the Pittsburgh Post Gazette

ARE YOU A GOOD WITNESS?

In the picture of the accident:

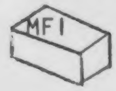
1. What was the name of the town?
2. What time of day was it?
3. What day of the week?
4. What season of the year?
5. Was the automobile a closed car?
6. What was its license number?
7. What direction was it going?
8. Did the driver have a hat or cap?
9. Was the boy bareheaded?
10. Which way was the trolley going?
11. What was its number?
12. How many people were in it?
13. How many others saw the accident?
14. How many people in the picture?
15. On which street was the grocery?
16. Who owned it?
17. On what street was the hardware store?
18. What was its name?
19. What was in the window with the clock?
20. Was there a mailbox on the corner?
21. How many children were visible?
22. How many animals were shown?
23. Was the man in the window bareheaded?
24. Who had the right of way?
25. What was the price of bananas?



Concept Memory

Curricular Objective

2.4 The child will determine his rate of learning using his perception and memory together.



Input

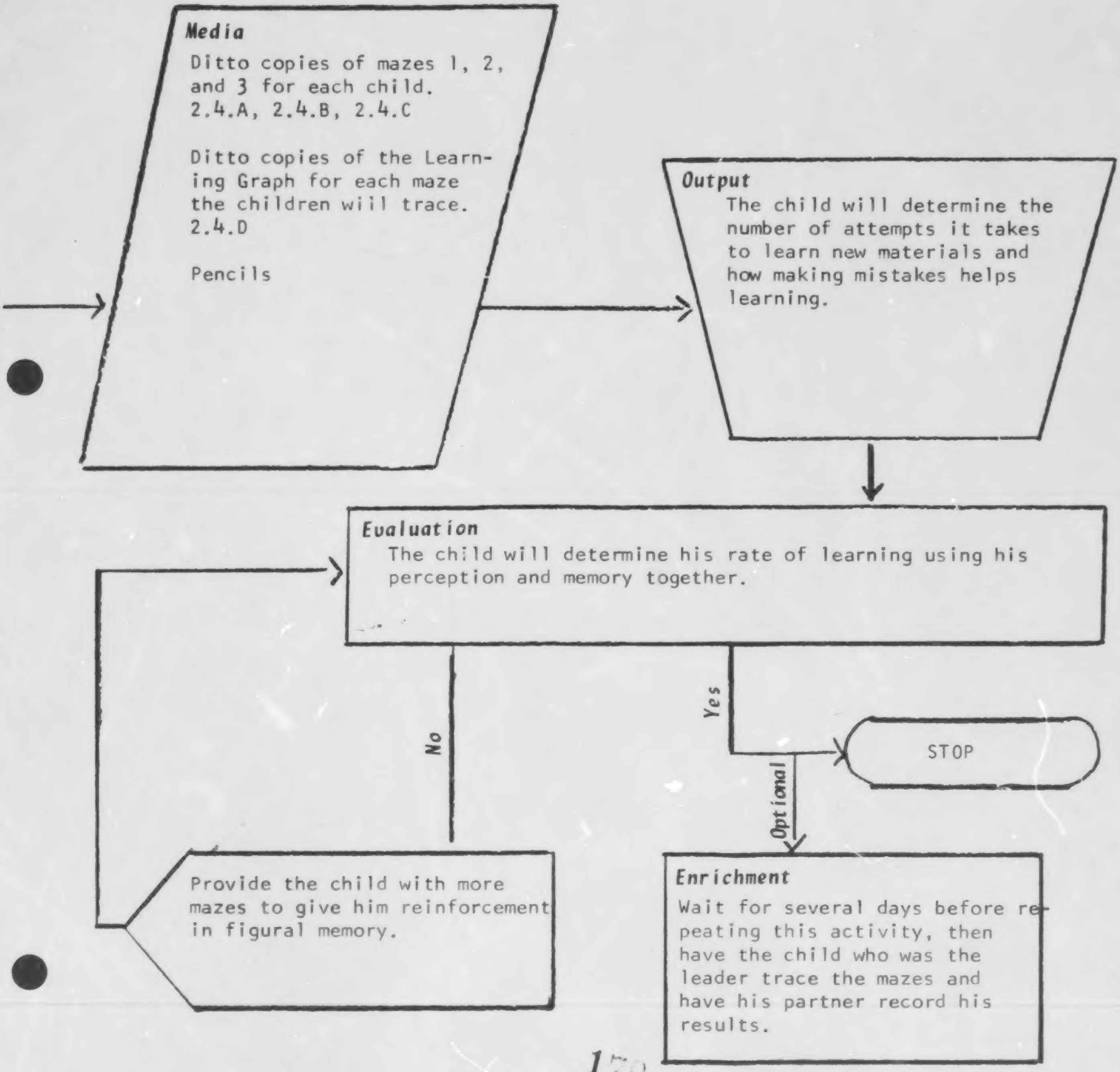
Discuss the importance of making mistakes in learning something new.

Discuss how the mind uses errors to reinforce the knowledge it considers to be correct.

Discuss the trial and error method of learning and how the mind retains the "correct" solution.

Learning Opportunities

1. The children will be divided into groups of two.
   - A. One child is the leader and gives the other child a maze to trace a path through. (See: 2.4.A)
     - 1. The leader records any time the pencil stops as an error.
     - 2. The leader marks the Learning Graph for the other child. (See: 2.4.D)
   - B. The leader gives the other child another maze to trace. (See: 2.4.B)
     - 1. The leader records another Learning Graph for this maze. (See: 2.4.D)
   - C. The leader has the other child trace a third and more difficult maze. (See: 2.4.C)
     - 1. The leader records the results on another Learning Graph. (See: 2.4.D)
   - D. The results of the number of errors and the number of trials (the number of times he starts over) are compared from the three Learning Graphs.
     - 1. The graphs are analyzed to see on which maze learning was more rapid and on which it was slower.
   - E. Through discussion determine why some learning was more rapid than others.



Media

Ditto copies of mazes 1, 2, and 3 for each child. 2.4.A, 2.4.B, 2.4.C

Ditto copies of the Learning Graph for each maze the children will trace. 2.4.D

Pencils

Output

The child will determine the number of attempts it takes to learn new materials and how making mistakes helps learning.

Evaluation

The child will determine his rate of learning using his perception and memory together.

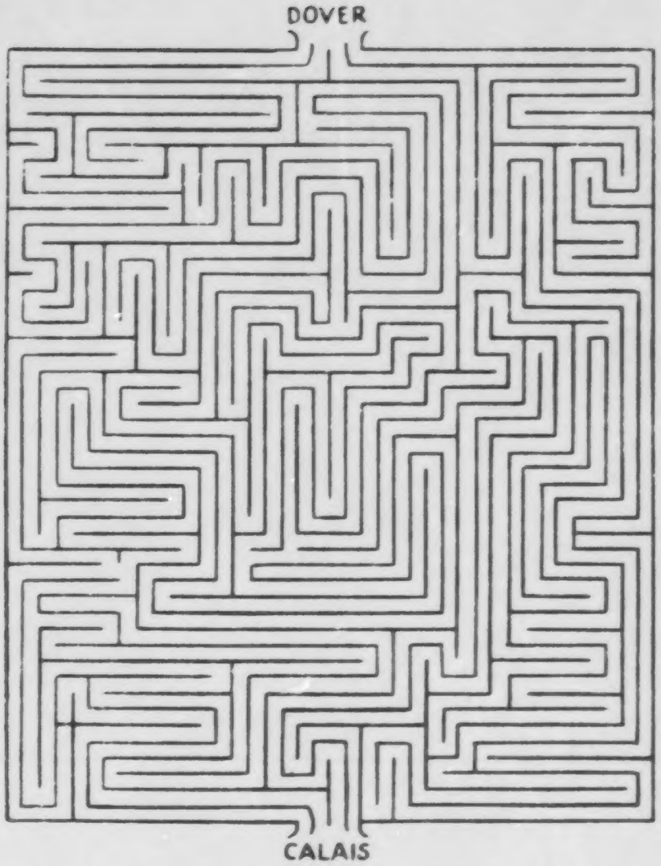
Provide the child with more mazes to give him reinforcement in figural memory.

Enrichment

Wait for several days before repeating this activity, then have the child who was the leader trace the mazes and have his partner record his results.

2.4.A.

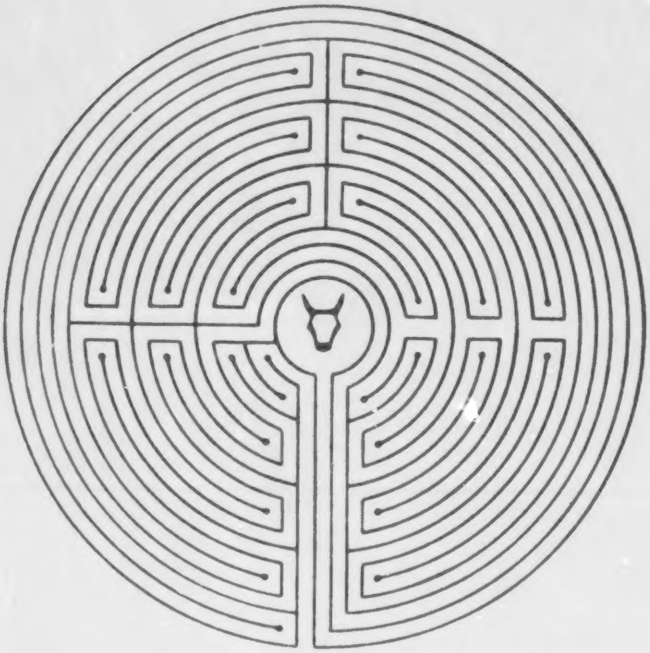
MAZE 1



FIND THE ROUTE FROM DOVER, ENGLAND TO CALAIS, FRANCE

From Mazes and Labyrinths by Walter Shepherd. Dover Publications.

MAZE 2

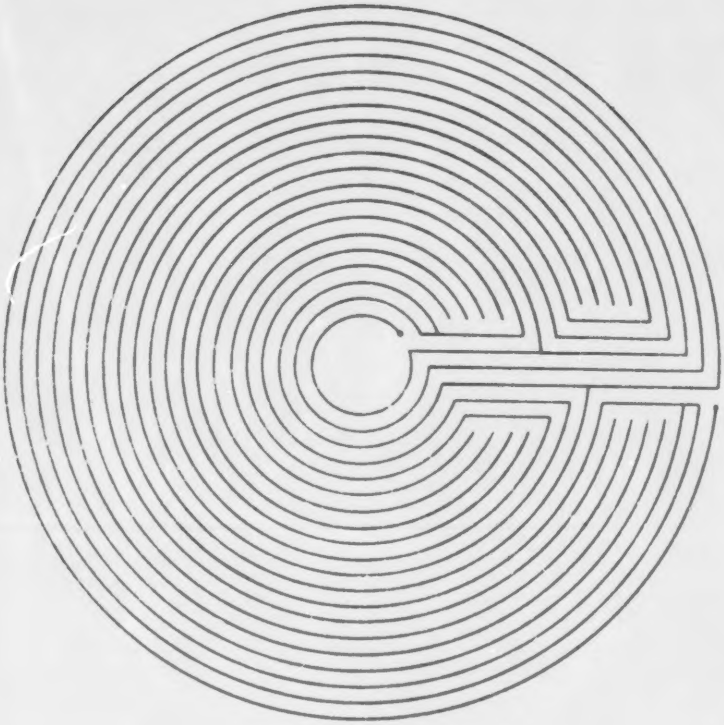


START AT THE BULLPEN AND FIND A WAY OUT

From Mazes and Labyrinths by Walter Shepherd. Dover Publications.

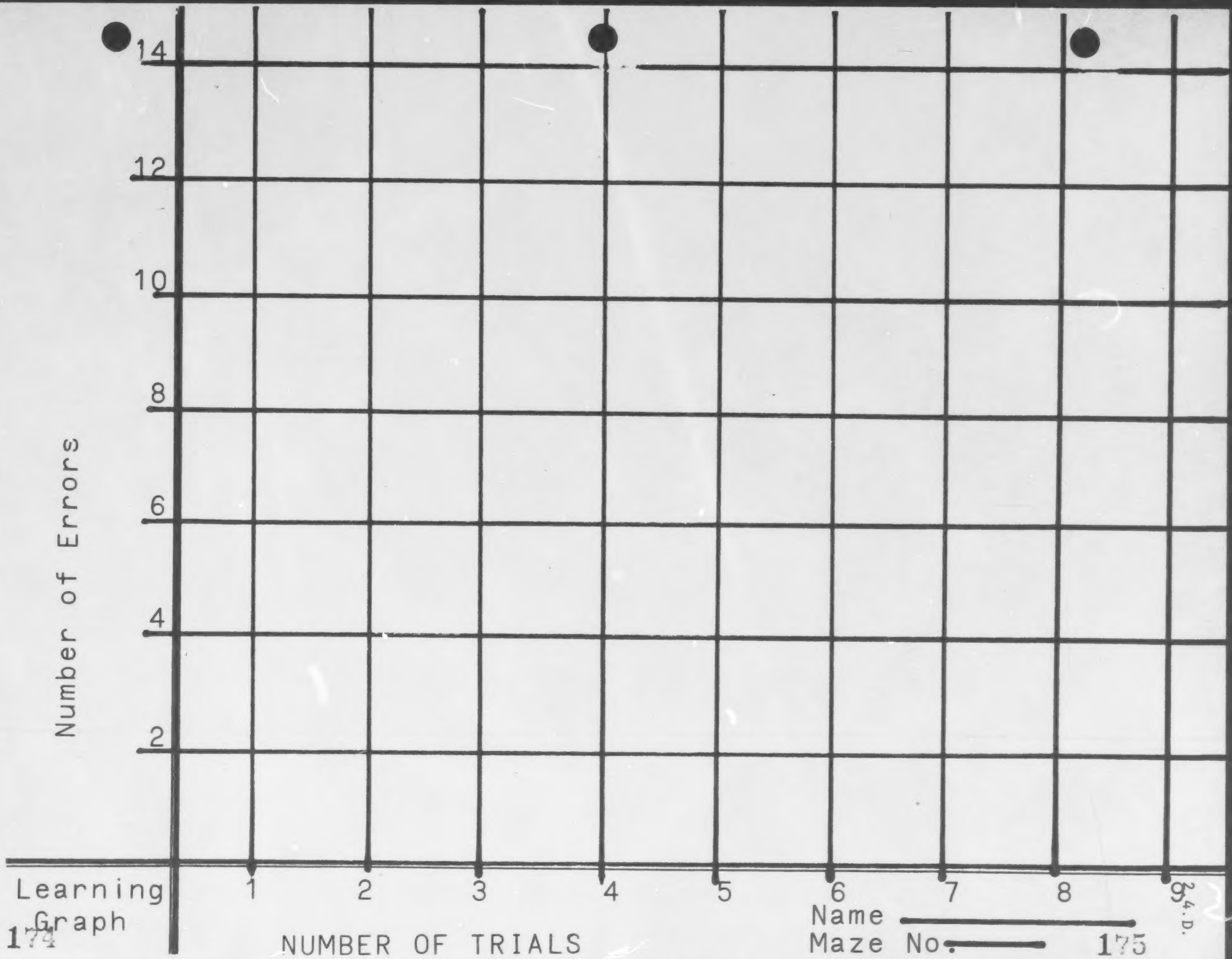
2.4.C.

MAZE 3



START IN THE BULLSEYE
AND FIND A ROUTE
TO THE OUTSIDE

From Mazes and Labyrinths by Walter Shepherd. Dover Publications, 1961.

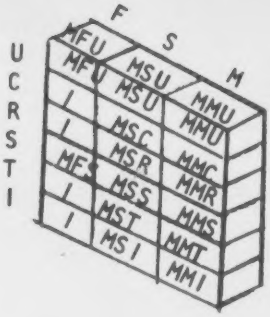


Learning Graph

Name

Maze No.

2.4.D.



Concept Memory

Curricular Objective

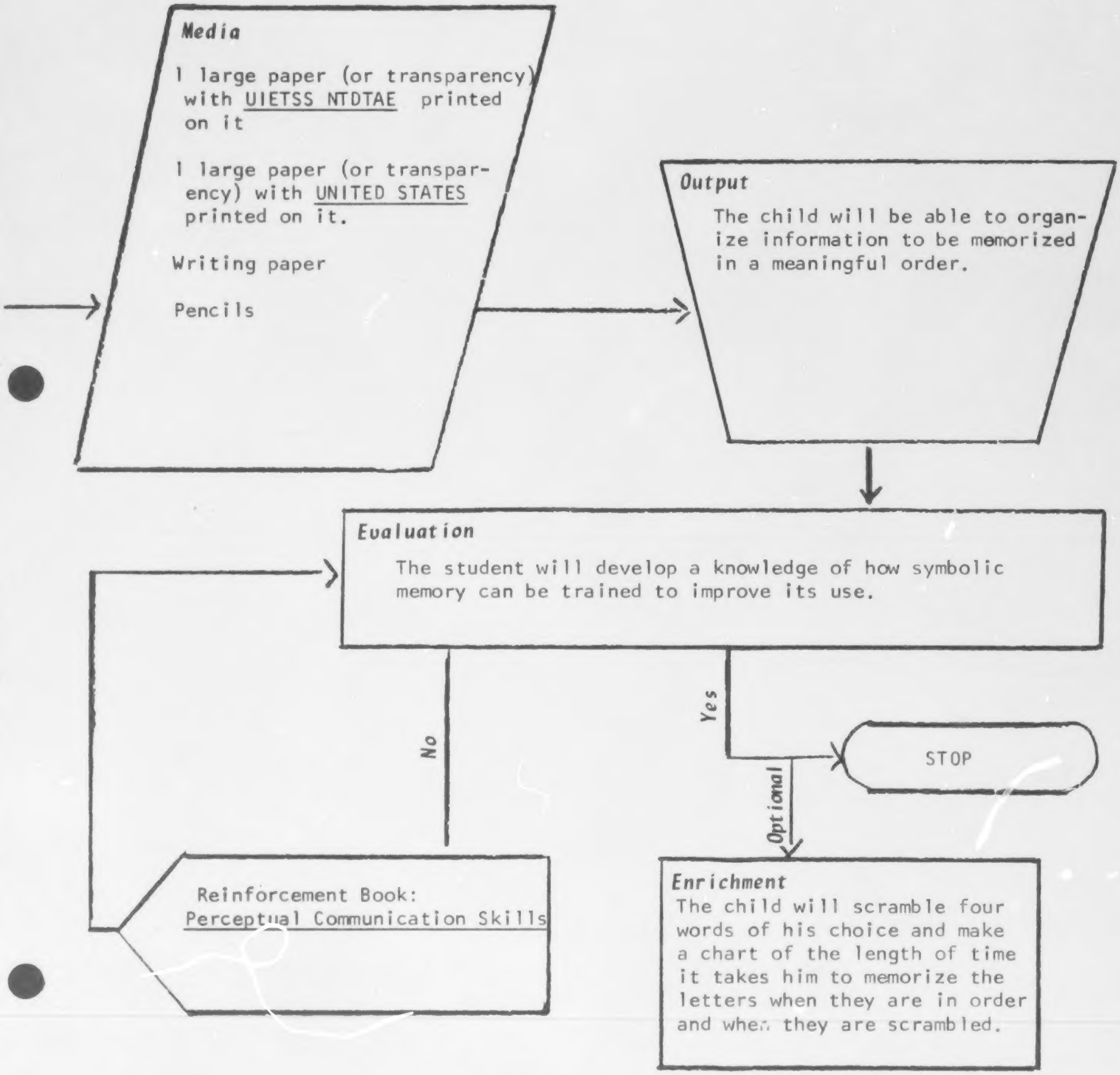
2.5 The student will develop a knowledge of how symbolic memory can be trained to improve its use.

Input

Discuss with the children ways to remember things for school or in everyday living.

Learning Opportunities

I. The teacher holds up a piece of paper with UIETSS NTDTAE printed on it.
  - A. Have the children study these letters until they think they have them memorized (about 2 minutes).
  - B. The children will try to write these letters on a piece of paper.
  - C. Discuss how much they remembered and how they went about memorizing the letters.
  - D. Discuss the possibility of re-arranging the letters to make memorization easier.
  - E. Find out if anyone discovered what the letters spell.
    - 1. Hold up a paper with UNITED STATES printed on it.
    - 2. Have the children study these letters until they think they have them memorized
  - F. Discuss the differences in the times memorization took.
    - 1. Discuss how this method could be applied.



Media

1 large paper (or transparency) with UIETSS NTDTAE printed on it

1 large paper (or transparency) with UNITED STATES printed on it.

Writing paper

Pencils

Output

The child will be able to organize information to be memorized in a meaningful order.

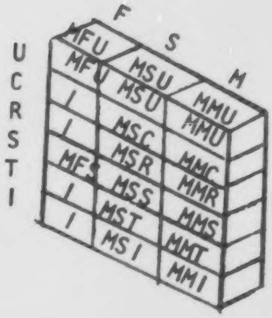
Evaluation

The student will develop a knowledge of how symbolic memory can be trained to improve its use.

Reinforcement Book: Perceptual Communication Skills

Enrichment

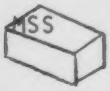
The child will scramble four words of his choice and make a chart of the length of time it takes him to memorize the letters when they are in order and when they are scrambled.



Concept Memory

Curricular Objective

2.6 The student will try to determine if his auditory or visual memory is stronger.



Input

Discuss how we receive information to be stored in our memories.

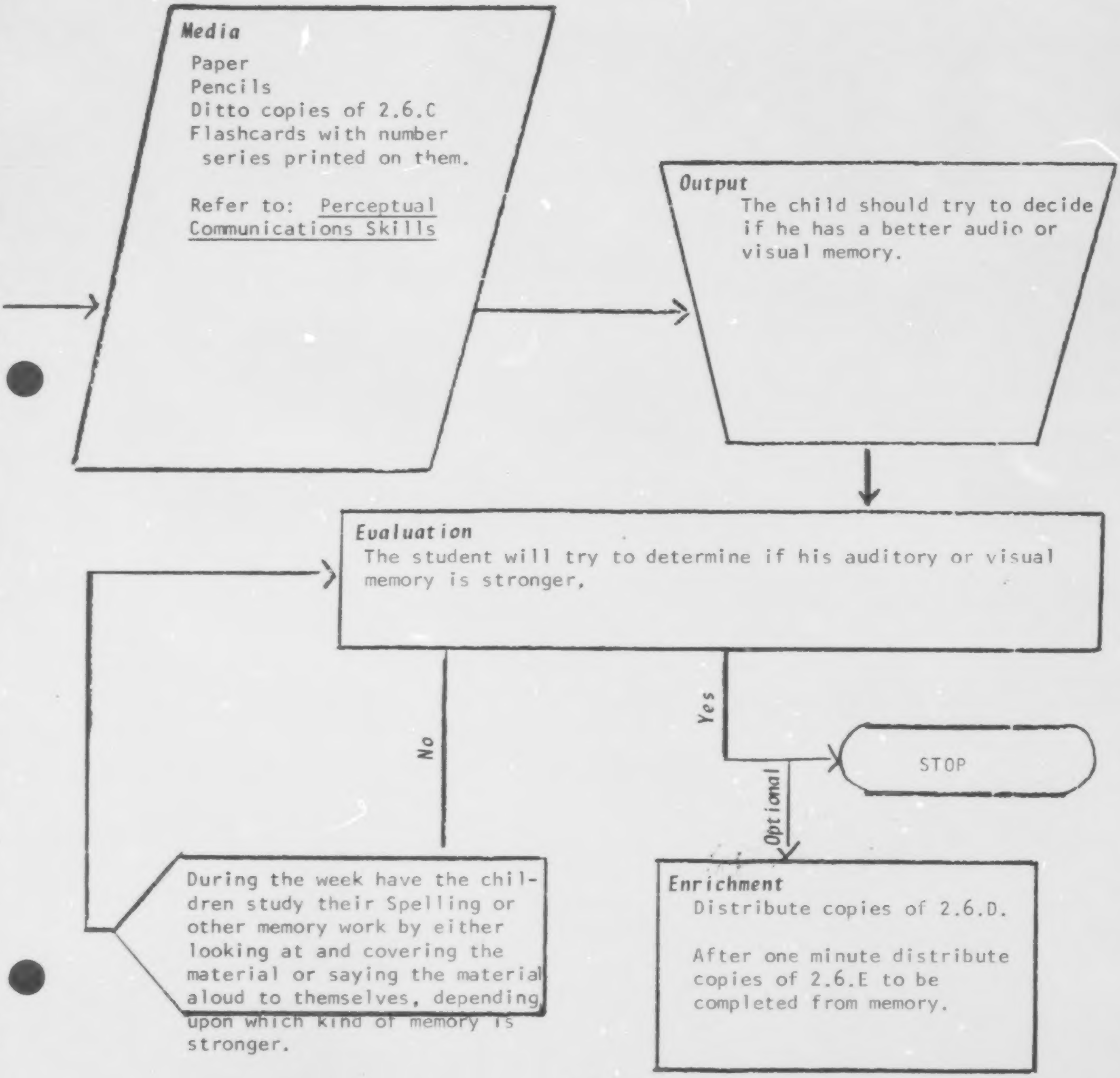
Discuss the two main senses we use - vision and hearing.

Discuss the idea that some people remember what they see better (visual memory) and that some people remember better what they hear (auditory memory).

Learning Opportunities

I. Distribute lined paper and ask the children to number 1 to 15.
  A. Explain that the teacher will read a series of numbers orally.
  B. After the last number is read the child is to write down the numbers in the order they were read. (See: 2.6.A)
  C. After the last number series is read the children correct each series as the answers are read.
  D. The number correct and the number missed are recorded on each child's memory record under Audio Memory. (See: 2.6.C)

II. Divide the class into pairs of children.
  A. Provide each pair with a set of 15 flashcards with a series of numbers on each card. (See: 2.6.B)
  B. As one student holds up each card the other student reads each number to himself and then writes down the number series.
  C. At the end of the 15 flashcards the child checks each response.
  D. Then he records his score on his memory record under Visual Memory.
    1. He should then circle the type of memory he received a higher score on.
  E. The flashcards should be exchanged for new ones and then the other student determines his visual memory score.
    1. He then compares his two scores.



Media

Paper
Pencils
Ditto copies of 2.6.C
Flashcards with number series printed on them.

Refer to: Perceptual Communications Skills

Output

The child should try to decide if he has a better audio or visual memory.

Evaluation

The student will try to determine if his auditory or visual memory is stronger.

During the week have the children study their Spelling or other memory work by either looking at and covering the material or saying the material aloud to themselves, depending upon which kind of memory is stronger.

Enrichment

Distribute copies of 2.6.D.

After one minute distribute copies of 2.6.E to be completed from memory.

NUMBER SERIES TO BE READ ORALLY

1. 3 - 7 - 9
2. 8 - 0 - 5
3. 4 - 1 - 6 - 9
4. 6 - 2 - 8 - 7
5. 5 - 7 - 3 - 2 - 4
6. 1 - 6 - 8 - 3 - 7
7. 2 - 3 - 1 - 5 - 8
8. 7 - 6 - 2 - 4 - 9 - 1
9. 3 - 2 - 0 - 7 - 8 - 4
10. 5 - 3 - 8 - 6 - 4 - 3
11. 6 - 4 - 9 - 8 - 2 - 4 - 5
12. 9 - 5 - 1 - 7 - 6 - 2 - 0
13. 5 - 2 - 6 - 1 - 9 - 8 - 4
14. 0 - 6 - 2 - 7 - 3 - 3 - 8 - 1
15. 4 - 9 - 1 - 5 - 3 - 2 - 0 - 8

NUMBER SERIES ON CARDS

CARD SET A
(For first student in pair)

1. 4 - 0 - 7
2. 7 - 3 - 1
3. 2 - 0 - 7 - 5
4. 9 - 2 - 1 - 6
5. 3 - 1 - 6 - 2 - 5
6. 2 - 9 - 1 - 6 - 3
7. 1 - 0 - 9 - 4 - 5
8. 6 - 2 - 5 - 8 - 9 - 7
9. 1 - 0 - 3 - 9 - 7 - 9
10. 3 - 9 - 2 - 9 - 6 - 3
11. 5 - 0 - 6 - 2 - 4 - 1 - 4
12. 2 - 8 - 6 - 4 - 5 - 3 - 1
13. 4 - 3 - 2 - 9 - 6 - 1 - 7
14. 8 - 2 - 6 - 1 - 9 - 4 - 3 - 0
15. 5 - 9 - 8 - 7 - 3 - 6 - 4 - 1

CARD SET B
(For other student in pair)

1. 3 - 2 - 6
2. 6 - 9 - 5
3. 4 - 6 - 1 - 8
4. 8 - 5 - 6 - 7
5. 9 - 4 - 6 - 2 - 3
6. 3 - 0 - 5 - 6 - 9
7. 4 - 8 - 9 - 5 - 1
8. 7 - 3 - 1 - 4 - 8 - 6
9. 2 - 8 - 0 - 1 - 5 - 2
10. 7 - 6 - 4 - 6 - 9 - 8
11. 5 - 2 - 9 - 1 - 7 - 8 - 3
12. 1 - 8 - 7 - 6 - 2 - 9 - 4
13. 8 - 1 - 7 - 5 - 2 - 3 - 9
14. 6 - 1 - 9 - 4 - 3 - 7 - 8 - 5
15. 1 - 2 - 6 - 5 - 9 - 4 - 3 - 0

2.6.B.

Name ______________________________

VISUAL MEMORY

Number Correct ________ ________

Number Missed ________ ________

AUDIO MEMORY

Number Correct ________ ________

Number Missed ________ ________

MEMORY FOR SYMBOLS

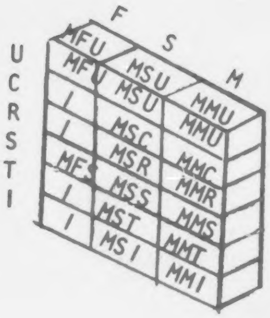
Study this diagram for one minute.

F	P	Y	B
Z	H	K	C
L	V	D	W

From Sharpen Your Wits by Gerald Mosler. Doubleday and Co., 1971.

Try to put the correct letter into the correct square.

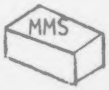
From Sharpen Your Wits, Gerald Mosler. Doubleday and Company, 1971



Concept Memory

Curricular Objective

2.7 The student will develop an understanding of how well his memory records a story he hears orally.



Input

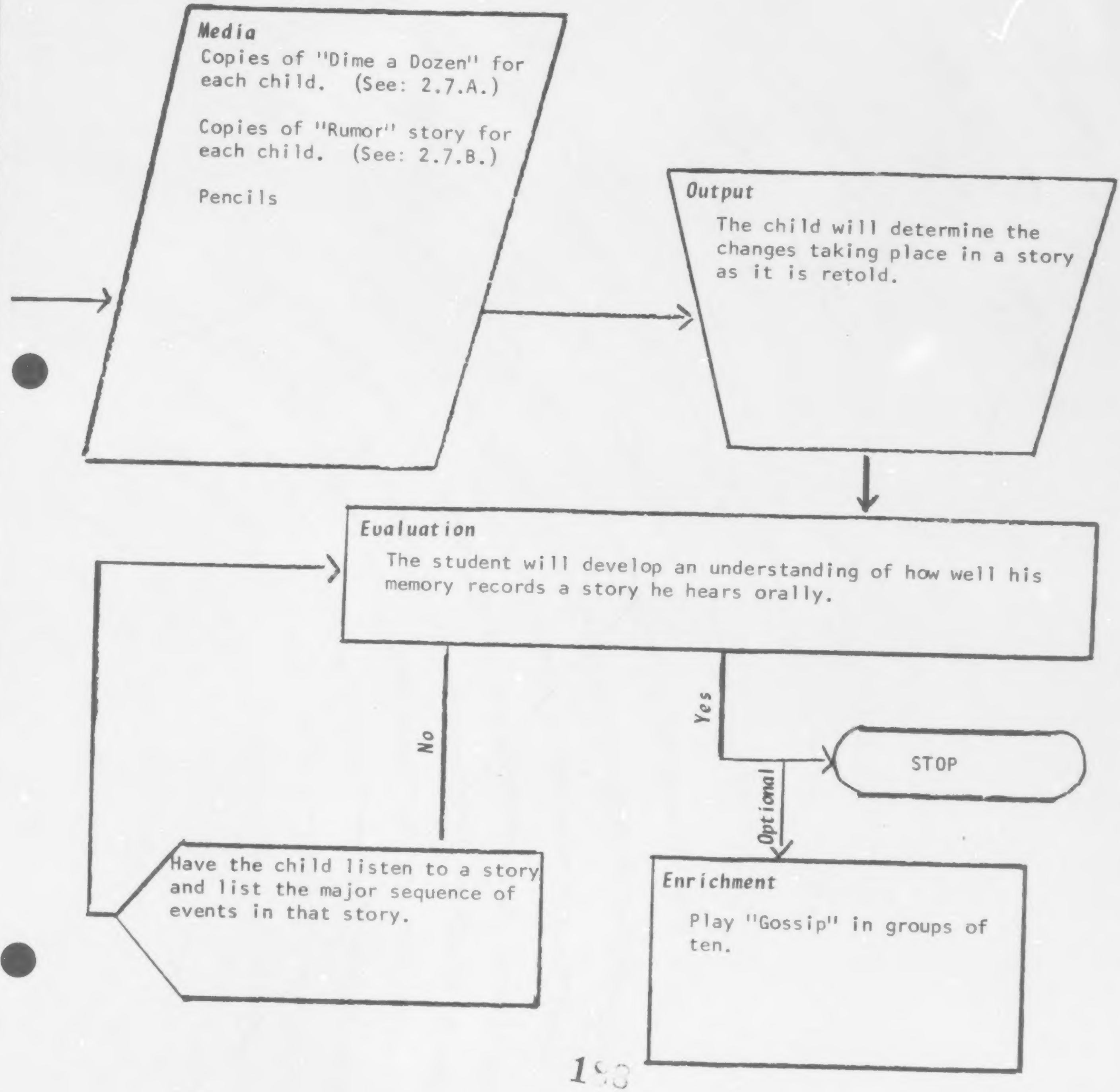
Discuss how information is communicated.

Discuss the fact that errors can be made in information we hear.

Discuss how errors occur in what we read.

Learning Opportunities

1. Divide the class into groups of five.
    A. Select a leader for each group.
        1. Each leader will read the "Rumor Story." (See 2.7.B.)
    B. Each leader will then retell the story to the several members of his group.
    C. While the class is working on the memory paper, "Dime a Dozen," (See: 2.7.A.) the third member of each group will go listen to the second member tell the story.
        1. The third member will retell the story to the fourth member, and so on.
    D. The leader remains with the group to put a check mark over each section of the story changed with each telling.
    E. When all members of the group have told the story, each person will receive a copy of the original story and compare it to the story as he told it.



Media

Copies of "Dime a Dozen" for each child. (See: 2.7.A.)

Copies of "Rumor" story for each child. (See: 2.7.B.)

Pencils

Output

The child will determine the changes taking place in a story as it is retold.

Evaluation

The student will develop an understanding of how well his memory records a story he hears orally.

Have the child listen to a story and list the major sequence of events in that story.

Enrichment

Play "Gossip" in groups of ten.

2.7.A.

A DIME A DOZEN

There's more mystery to a dime than you think! Test your dimeology by marking each of the following statements TRUE (T) or FALSE (F). A score of 9 or over is very good.

1. Dimes are smaller in size than pennies. ______
2. The word "dime" appears just once on a dime. ______
3. A man's head is shown on every dime. ______
4. The word "ten" doesn't appear on any dime. ______
5. A dime's value is not indicated on its face side. ______
6. The head on a dime is always shown in profile. ______
7. The word 'liberty' always appears on the face side of a dime. ______
8. More than one symbol is pictured on the tall side of a dime. ______
9. The letters in the words "United States of America" are engraved in a semicircle on dimes. ______
10. The only numbers to appear on a dime are the numerals marking the date of coinage. ______
11. The inscriptions "In God We Trust" and "E Pluribus Unum" always appear on dimes. ______
12. There have been only two dimes of a different design since 1916. ______

From Sharpen Your Wits, by Gerald Mosler. Doubleday and Co., 1971

ANSWERS

All statements are true.

"RUMOR" STORY

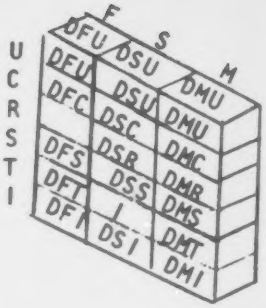
One summer afternoon, Sally Jameson was riding her new blue English bicycle along the Old River Road. The dust rose in clouds behind her as she rounded the curve just before reaching the deserted Brightwell mansion.

As she reached the great line of oaks which led to the main house, an eerie wailing began. Thinking at first the sound was the wind in the tree branches, Sally kept on riding - but the noise grew louder and louder.

Although very frightened, Sally decided to investigate. Slowly and cautiously she rode up the long avenue of trees. Suddenly, from the gaping witch-tooth windows, small puffs of black smoke curled into the air. The wailing became a shriek like an air-raid siren. Sally entered the front door.

On her left was a great suit of armor without a head. Hanging over the stair rail was a bright Indian rug crazily colored in orange and gold and green. Scraping sounds like a dog scratching on woodwork came from overhead as Sally mounted the circular staircase.

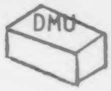
Stiff with fear, Sally went toward the door. Just as she started into the room, a white shape came lunging at her, and in terror she backed away and fell headlong down the long flight of stairs. Sobbing and crying, she raced from the house and ran down the road leaving her bicycle behind. No one would believe her story but from that day to this, Sally maintains that a white shape in armor and blanket rides an English bicycle down the dusty roads by the river.



Concept Divergent Production

Curricular Objective

3.1.1 Given a stated problem the students will generate thirty ideas to solve the problem.



Input

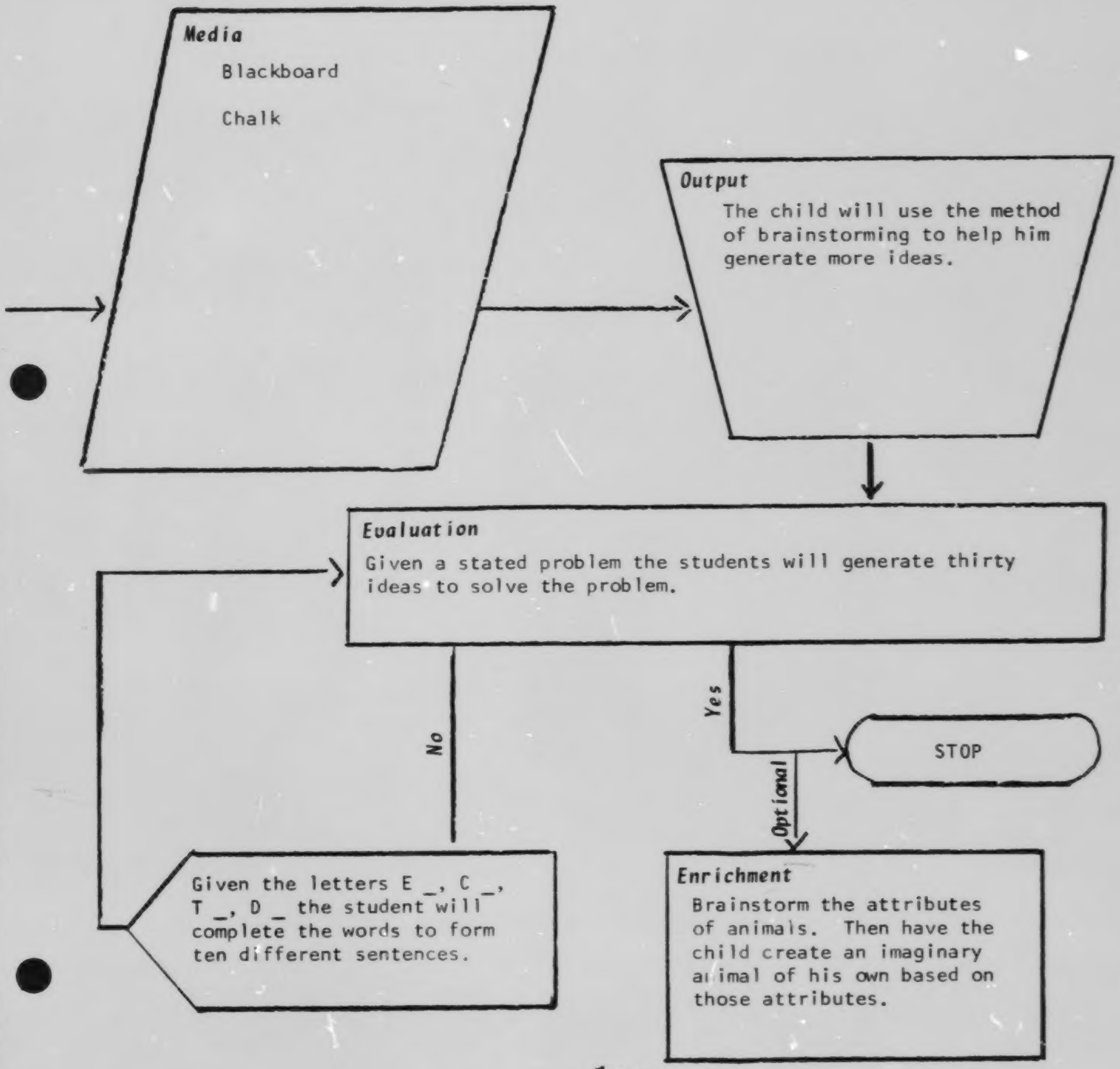
Discuss fluency and how advertising agencies have used the process of "brainstorming" to help their idea men come up with more ideas.

Learning Opportunities

I. Discuss the rules of brainstorming:
   A. All ideas are listed on the board by the teacher.
   B. No criticism of any idea is allowed.
   C. Build on each other's ideas - someone may trigger a new thought for you.
   D. Make your ideas as free-wheeling and unusual as you can.

II. Brainstorm to name as many things as possible that are soft, white, and edible.

III. After the brainstorming session look at the list of ideas and see how many fit the attributes of soft, white, and edible.



Media

Blackboard

Chalk

Output

The child will use the method of brainstorming to help him generate more ideas.

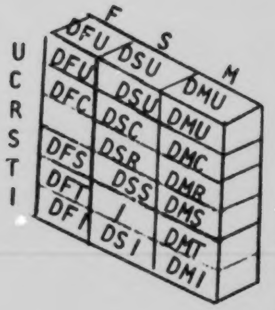
Evaluation

Given a stated problem the students will generate thirty ideas to solve the problem.

Given the letters E _, C _, T _, D _ the student will complete the words to form ten different sentences.

Enrichment

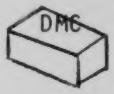
Brainstorm the attributes of animals. Then have the child create an imaginary animal of his own based on those attributes.



Concept Divergent Production

Curricular Objective

3.1.2 Given an object each student will generate twenty ideas for using the object in an unusual way.



Input

Through discussion define fluency as the generation of many ideas in a given length of time. Discuss how fluency can be used in everyday life. Have the children name some people they think of as fluent with ideas.

Review the rules of brainstorming (See: 3.1.2.A.)

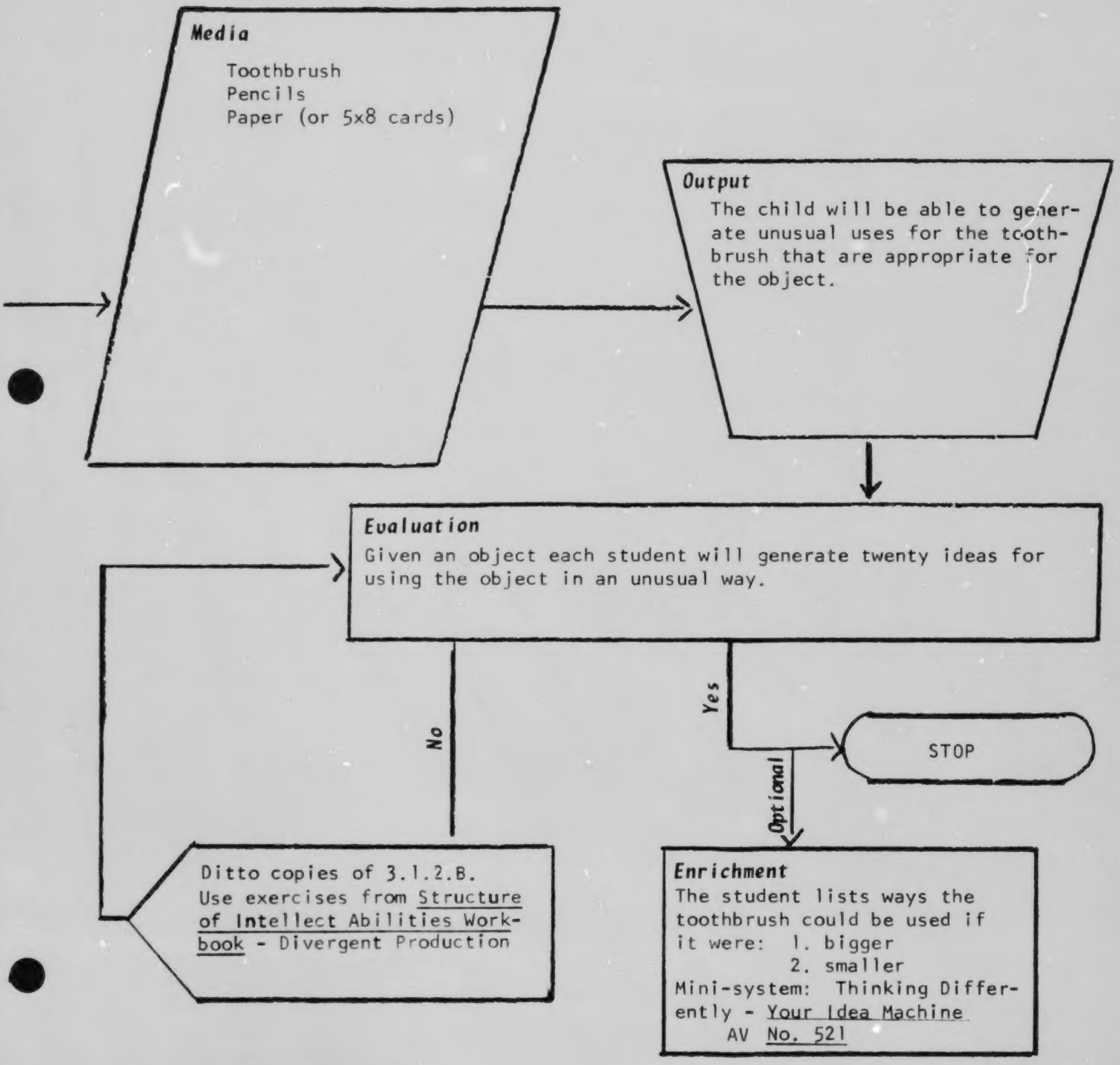
Learning Opportunities

I. Show the children a toothbrush. Tell a story about how this toothbrush company overproduced this model of toothbrush and now they have too many of them.

II. Have each child brainstorm to produce as many unusual uses as he can for a toothbrush.
  A. After he finishes the student will review his list and select the uses that will:
    1. Benefit people without creating a new problem.
    2. Be in keeping with life in the present or near-future times.
    3. Be simple and practical enough to be used by people.

III. The ideas that the student has remaining on his list will be shared with a small group of three or four students and analyzed according to the same standards.

IV. Each student will then determine how many of his ideas are left and present orally to the class his most unusual ones.



Media

Toothbrush
Pencils
Paper (or 5x8 cards)

Output

The child will be able to generate unusual uses for the toothbrush that are appropriate for the object.

Evaluation

Given an object each student will generate twenty ideas for using the object in an unusual way.

Ditto copies of 3.1.2.B.
Use exercises from Structure of Intellect Abilities Workbook - Divergent Production

Enrichment

The student lists ways the toothbrush could be used if it were: 1. bigger
2. smaller

Mini-system: Thinking Differently - Your Idea Machine
AV No. 521

WHAT EVERYONE SHOULD KNOW ABOUT BRAINSTORMING BUT WAS TOO BUSY TO ASK

I. Purposes of Brainstorming
  A. To create a great number of ideas which leads to more quality in those ideas.
  B. To open people up to sharing ideas without fear of criticism.
  C. To enable members of the group to build on each others' ideas.

II. Procedure
  A. The leader states a definite problem.
    1. Make it specific and simple.
    2. Examples:
      a. Name everything you can think of that is soft, white, and edible.
      b. What other uses can you think of for a TV tray?
      c. In what ways would you improve a school pencil to make it easier to use?

  B. State the rules for brainstorming.
    1. No criticism - all ideas are accepted.
    2. Make your ideas free wheeling - as way out as you want to make them.
    3. Build on the ideas of others - someone may give you an idea you can elaborate upon.

  C. Restate the problem and as the children give their ideas, list them on the board with NO comment.

  D. After 15 to 20 minutes, stop the brainstorming.
    1. Comment on the amount and variety of responses.

  E. Evaluate each idea by using standards you have set up, such as:
    1. Does it actually solve the problem - or does it create new ones? (Does it build or help society?)
    2. Is it possible to use it either now or in the near future? (Is it practical?)
    3. Are human beings really able to handle it? (Is it compatible with human beings?)

  F. Leave the ideas on the blackboard that the children decide fit the criteria.

III. After brainstorming, you may discuss feelings and how the ideas came about.

IV. Then each child may take any idea and develop it on his own by:
  A. Making a labeled diagram or design of the idea or object.

  B. Making a model of the idea.

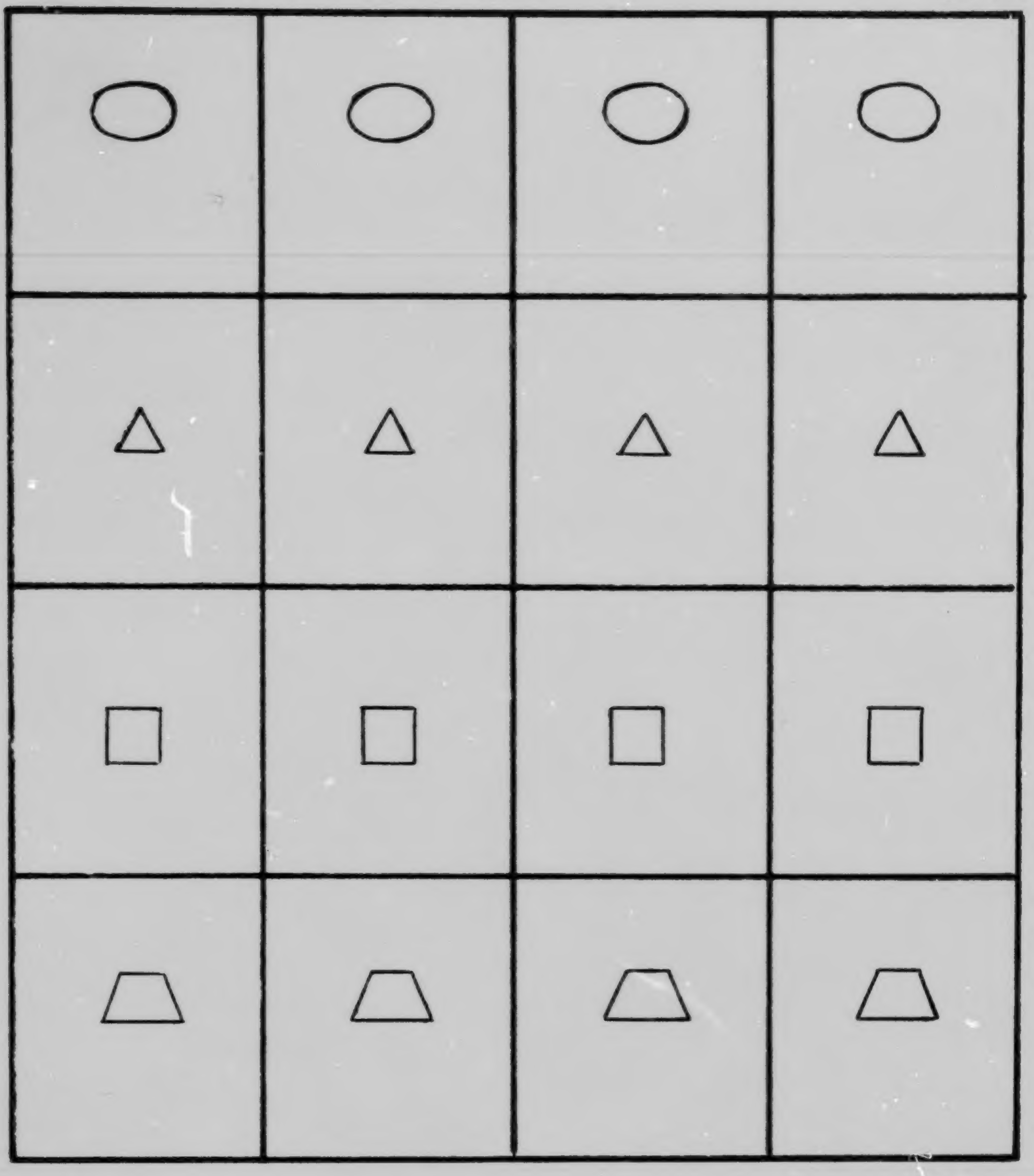
  C. Writing an explanation of his application of the idea.

  D. Creating an "Invention" of his own by combining the ideas from the board.

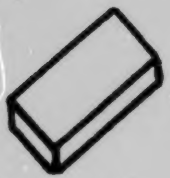
FLEXIBLE FLUENCY

3.1.2.B.

Add lines to these shapes to create a new object.

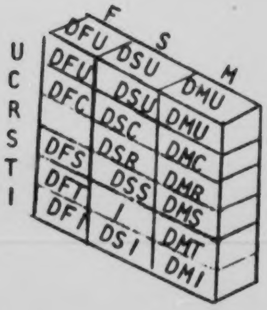


How many



uses can you think of for a brick?

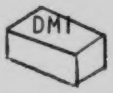
From Kaiser Aluminum News, Kaiser Aluminum & Chemical Corporation.



Concept Divergent Production

Curricular Objective

3.1.3 Given specific problems the students, as a group and individually will use the brainstorming process to solve these problems.



Input

Discuss old unused items around the house.

Discuss what usually happens to these things and if there might be a use for them.

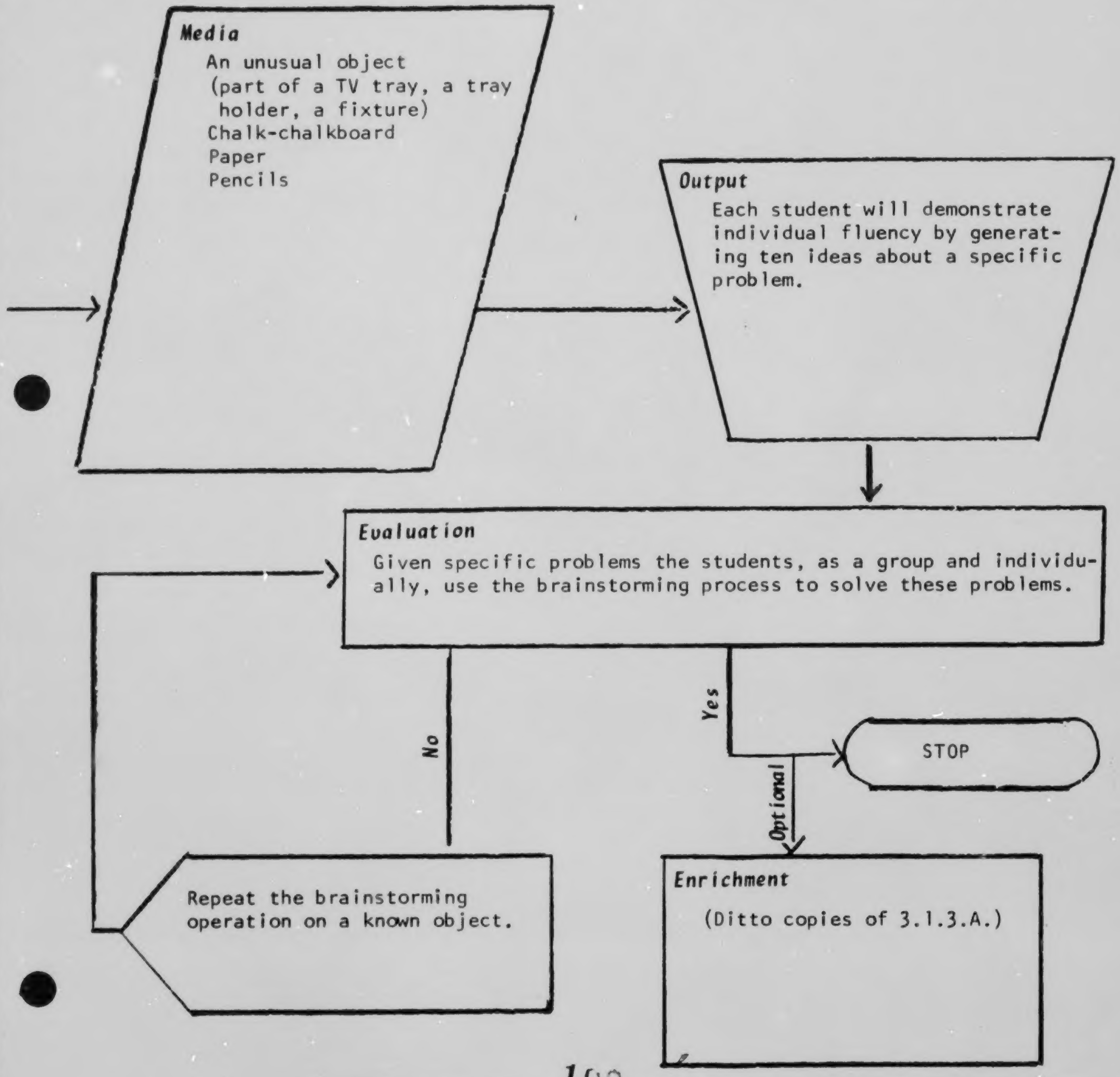
Learning Opportunities

I. Show the children an object that would look unfamiliar to them. Brainstorm to produce thirty uses for it.

II. Go back and select the ideas that are the most unusual.

III. Each student will select one of the following situations and produce ten possible solutions:
  A. What could you do to cut down on the need to do dishes at your house?
  B. How could you use a bicycle inside your home?
  C. If you were a math teacher, what would you do to make math more interesting and necessary to your students?

IV. Have each child mark his most unusual ideas.



Media

An unusual object
(part of a TV tray, a tray holder, a fixture)
Chalk-chalkboard
Paper
Pencils

Output

Each student will demonstrate individual fluency by generating ten ideas about a specific problem.

Evaluation

Given specific problems the students, as a group and individually, use the brainstorming process to solve these problems.

Repeat the brainstorming operation on a known object.

Enrichment

(Ditto copies of 3.1.3.A.)

ASSIGNING REASONS TEST

Below are some questions to which you are asked to assign short (one-line) reasons. Your reasons should be plausible, although it is perfectly all right if they are unusual. A good reason is one which after hearing it, the listener might say: "Yes, that is a distinct possibility which I didn't think of."

Example: A agreed to sell B his car and B agreed to buy it. But when A brought the car to B's house, no sale was made. Why?

a) B had died.
b) B had disappeared.
c) B went back on his word.
d) The car was not in the shape A had represented it to be.
e) A did not have full title to the car.

Remember to make your answers both plausible and unusual. Keep them short.

1. Why do people wear clothes?

a) ______
b) ______
c) ______
d) ______
e) ______

2. Why did Miss Jones quit teaching?

a) ______
b) ______
c) ______
d) ______
e) ______

3. B wished to buy meat, and S, a storekeeper who had meat on hand, wished to sell some. But no sale took place. Why?

a) ______
b) ______
c) ______
d) ______
e) ______

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Assigning Reasons Test (page 2)

4. C was a candidate for president of a club. In the balloting no one received more votes, yet C did not become president. Why?

a) ______________________________

b) ______________________________

c) ______________________________

d) ______________________________

e) ______________________________

5. A bank was informed that a robbery was going to take place. Nevertheless the robbery was carried off successfully and the robbers escaped. Why?

a) ______________________________

b) ______________________________

c) ______________________________

d) ______________________________

e) ______________________________

6. A policeman finds B dead on the street and A near the scene with a gun in hand. A later admitted that he shot B, yet A escaped an indictment for murder. Why?

a) ______________________________

b) ______________________________

c) ______________________________

d) ______________________________

e) ______________________________

7. A man performed a certain act which, while legal and not immoral or injurious, was both unnecessary and unprofitable to him or to any other person. Why?

a) ______________________________

b) ______________________________

c) ______________________________

d) ______________________________

e) ______________________________

8. A game hunter spared the life of an elephant he encountered. Why?

a) ____________________

b) ____________________

c) ____________________

d) ____________________

e) ____________________

9. X loved Y more than Z but married Z. Why?

a) ____________________

b) ____________________

c) ____________________

d) ____________________

e) ____________________

10. An old man had three children, A, B, and C. A and B were generally considered to be more worthy than C. Yet, when the old man died, he left all his estate to C. Why?

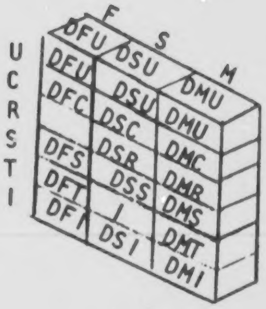
a) ____________________

b) ____________________

c) ____________________

d) ____________________

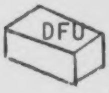
e) ____________________



Concept Divergent Production

Curricular Objective

3.1.4 The child will show fluency in his ideas by generating as many ideas as he can.



Input

Discuss a few characteristics of divergent thinking:
- many ideas
- look at things in new ways

Discuss the people the children may know who have lots of ideas
-discuss why they may be that way

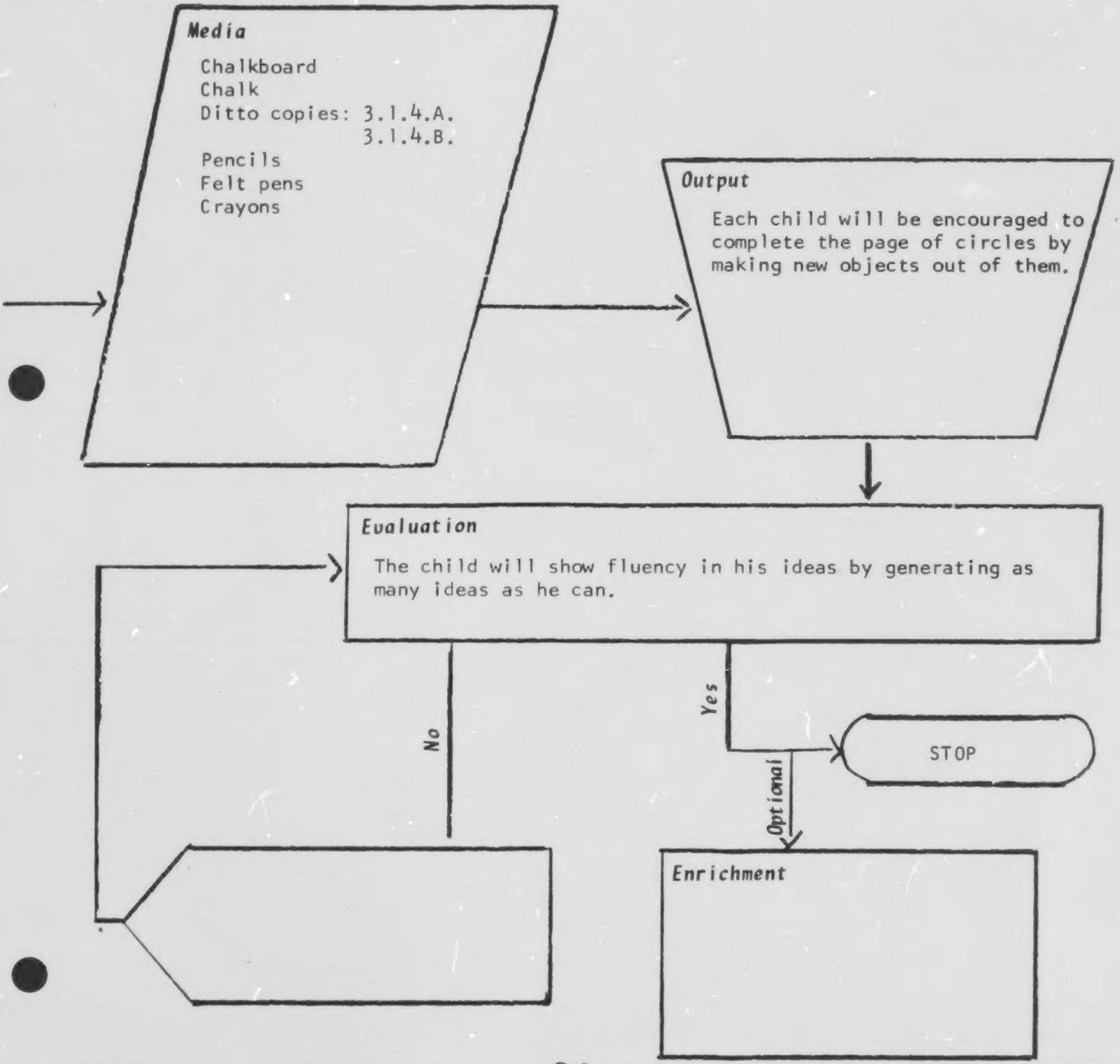
Define and discuss the term "fluency"

Learning Opportunities

I. Review the process of brainstorming.

II. Brainstorm all the things the children can make from a squiggle. (See: 3.1.4.A.)
  A. After brainstorming discuss why it was possible to come up with so many ideas.
  B. Discuss with the group the things that helped them come up with their ideas.
  C. Discuss the fluency of their ideas and ways to improve fluency.

III. Let each child try out his own fluency by making many things out of circles. (See: 3.1.4.B.)
  A. Encourage them to keep going and developing ideas.
  B. Let the children share their ideas with each other.



Media

Chalkboard
Chalk
Ditto copies: 3.1.4.A.
3.1.4.B.
Pencils
Felt pens
Crayons

Output

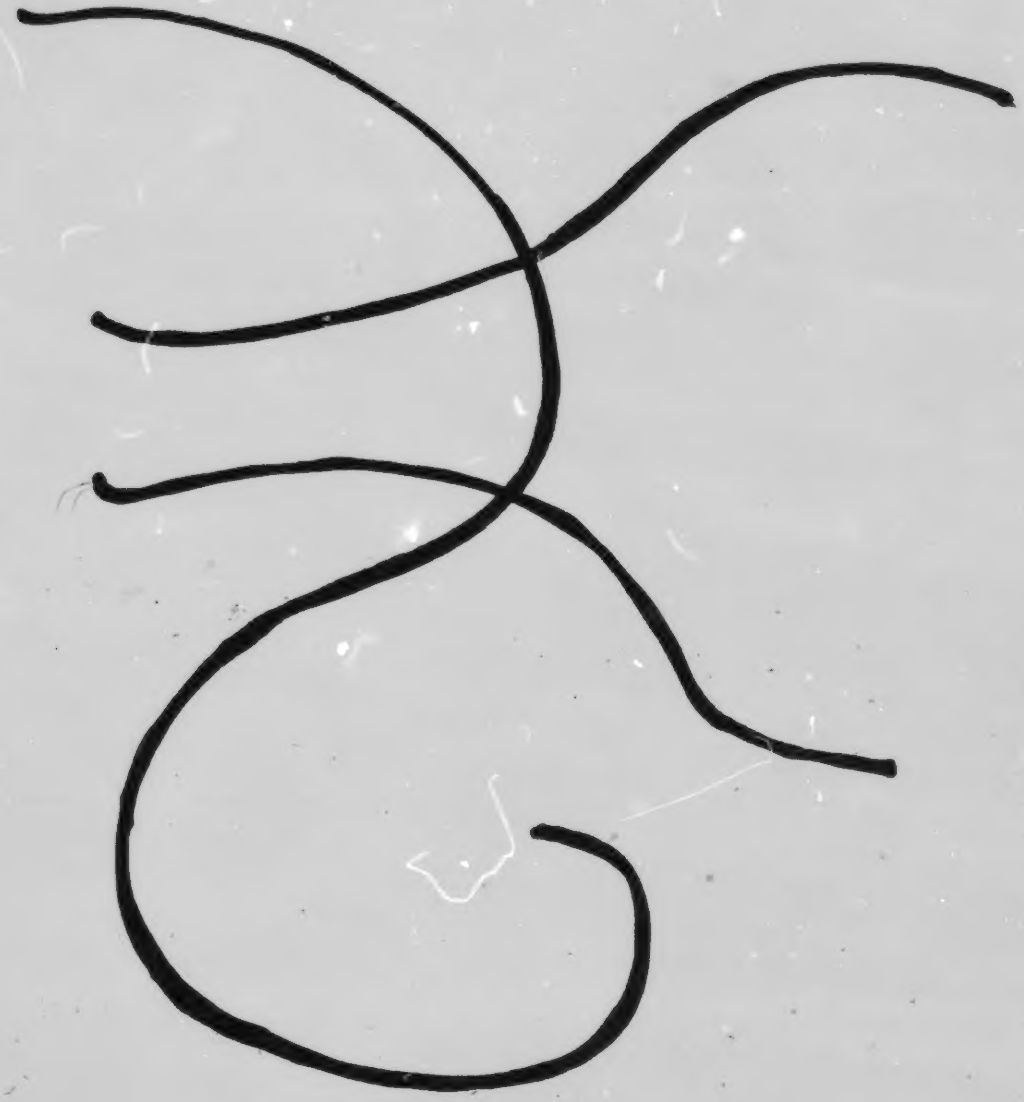
Each child will be encouraged to complete the page of circles by making new objects out of them.

Evaluation

The child will show fluency in his ideas by generating as many ideas as he can.

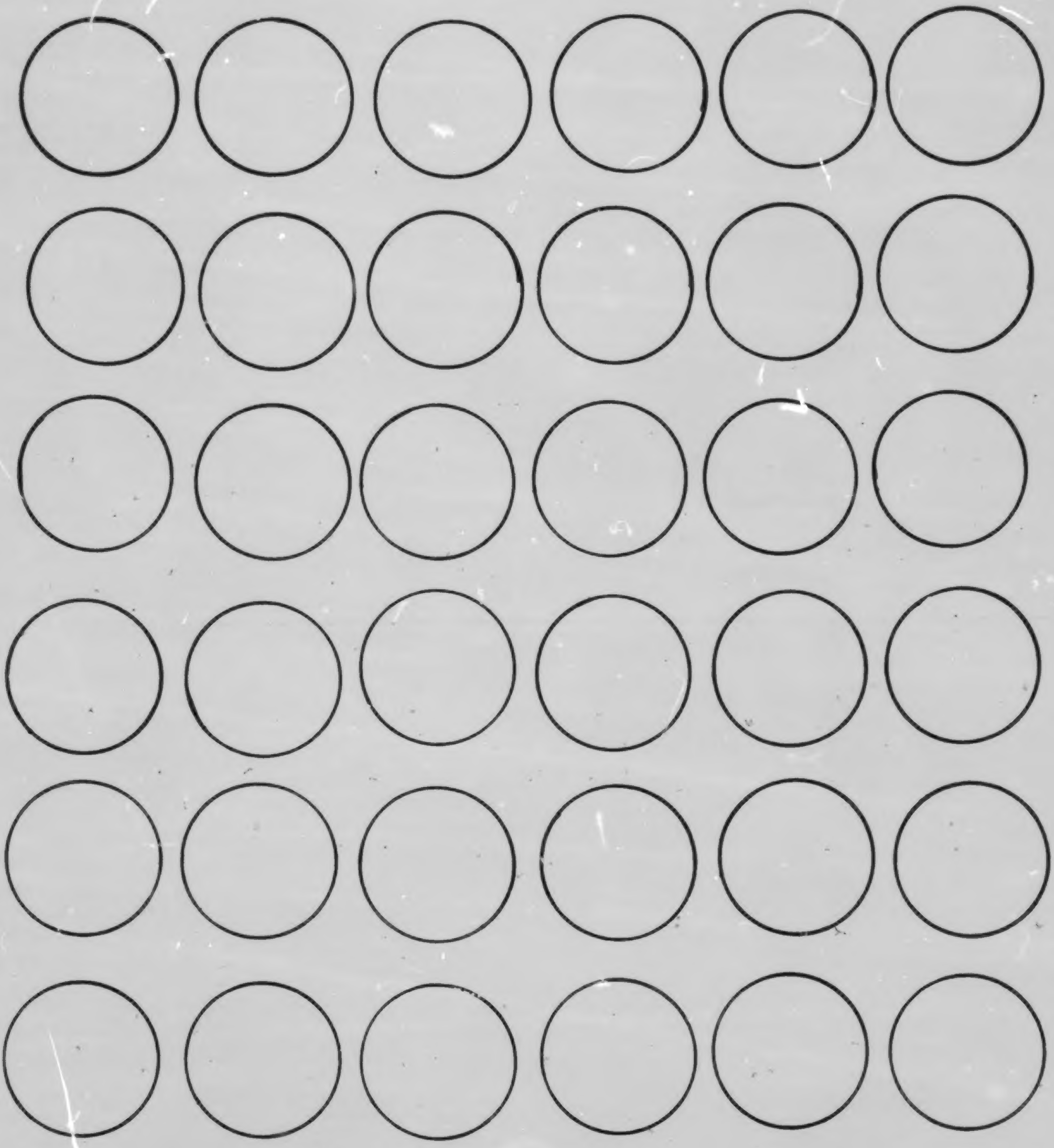
Enrichment

EXAMPLE OF A SQUIGGLE



3.1.4.B.

See how many objects you can make from the circles below. A circle should be the main part of whatever you make. With pencil or crayon add lines to the circles to complete your picture. Your lines can be inside the circle, outside the circle, or both inside and outside the circle. Try to think of things that no one else in the class will think of. Make as many things as you can and put as many ideas as you can in each one. Add labels or titles if the identity of the object is not clear.



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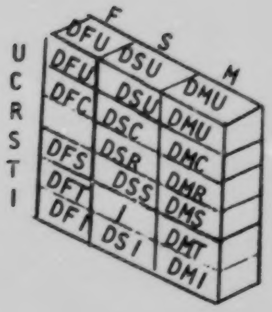
F
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DFS
DSR
DMR
DFT
DSS
DMS
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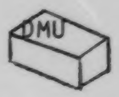
DMT
DMI

Concept Divergent Production

Curricular Objective

3.1.5 The students will demonstrate their verbal fluency by listing as many items as they can, while working with a group.



Input

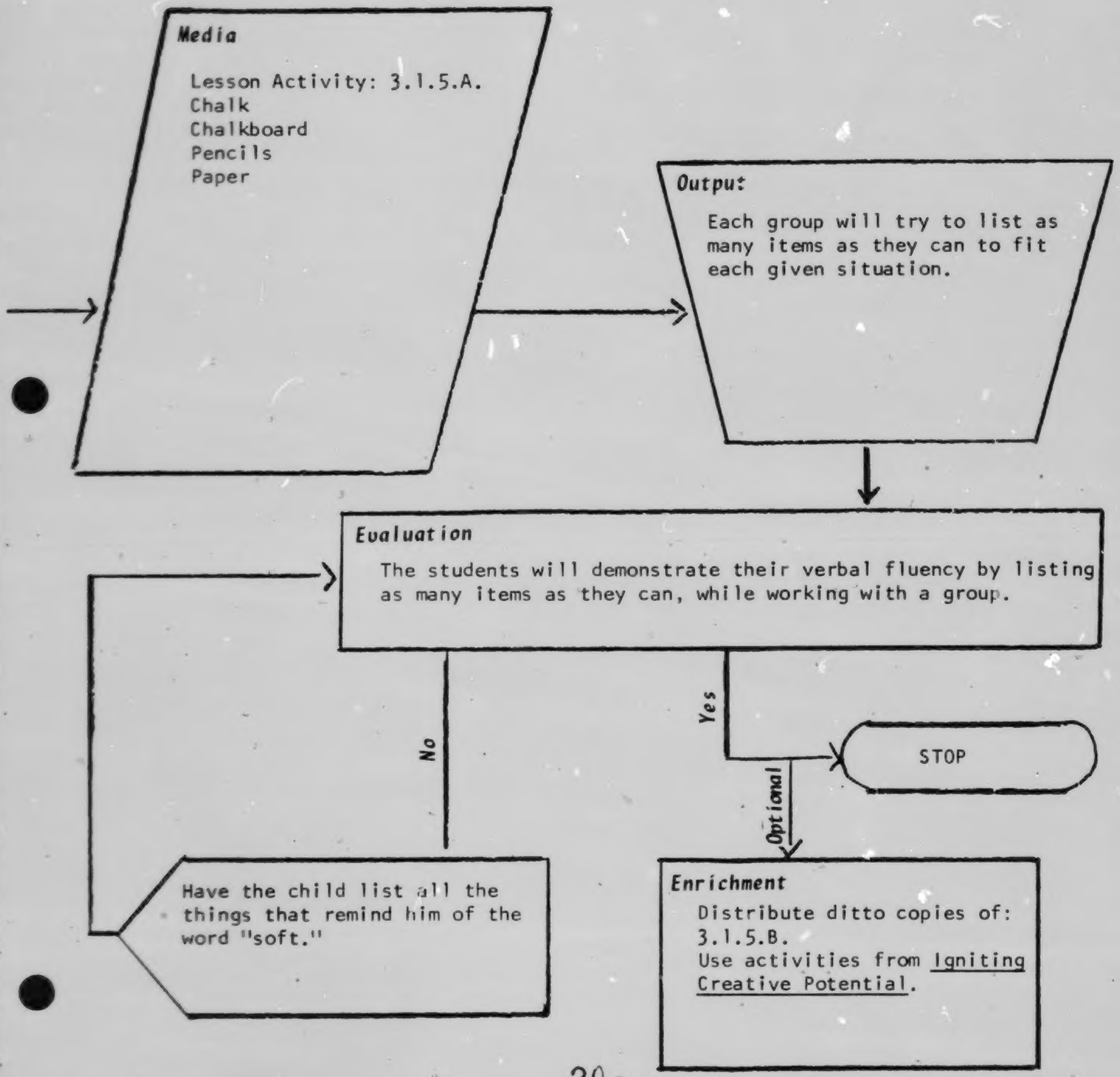
Discuss ideas as words. Help the students decide whether they think in words or pictures.

Discuss people who have lots of ideas and communicate these ideas to others - fluency.

Learning Opportunities

I. Play verbal tennis:
   A. Divide the class into two teams.
   B. The teacher says a word (such as: head, horse, limb, etc.)
   C. The teams take turns naming words that rhyme with the given word.
   D. The team with more words listed wins.

II. Divide the class into four groups.
   A. Set up the problem of going to another planet. (See: 3.1.5.A)



Media

Lesson Activity: 3.1.5.A.
Chalk
Chalkboard
Pencils
Paper

Output:

Each group will try to list as many items as they can to fit each given situation.

Evaluation

The students will demonstrate their verbal fluency by listing as many items as they can, while working with a group.

Have the child list all the things that remind him of the word "soft."

Enrichment

Distribute ditto copies of: 3.1.5.B.
Use activities from Igniting Creative Potential.

LESSON ACTIVITY TO DEVELOP FLUENCY OF IDEAS

Activity:

"Imagine you and your family are going to a new planet. It is so far away that once you are there, you can never come back. On this planet is good soil, much like good farm soil on Earth. Rivers with water, seasons and weather like Earth's, and air and sunlight like Earth's exist there. However, there are no living things - neither plants nor animals. Think of all the possible things you might need."

List everything you would take with you -- everything you might want or need.

Select a recorder and brainstorm a written list.

Allow 10-15 minutes for the students to write out their ideas.

Permit students to read their lists to the group.

Discuss validity of ideas.

HOW FLUENT ARE YOU?

1. Fluency of ideas:

List as many things as you can that are heavy, hard, and white.

__________ __________ __________
__________ __________ __________
__________ __________ __________
__________ __________ __________
__________ __________ __________
__________ __________ __________

2. Fluency of word associations:

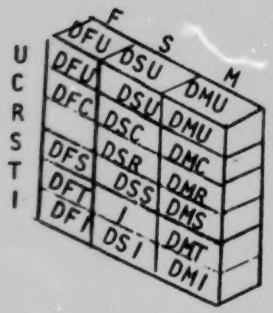
List as many words as you can that mean nearly the same as "HARD."

__________ __________ __________
__________ __________ __________
__________ __________ __________
__________ __________ __________
__________ __________ __________
__________ __________ __________
__________ __________ __________
__________ __________ __________

3. Fluency of sentence systems.

Use the following initial letters to construct sentences. Use each word only once.

E__________ c__________ f__________ s__________
E__________ c__________ f__________ s__________
E__________ c__________ f__________ s__________
E__________ c__________ f__________ s__________
E__________ c__________ f__________ s__________

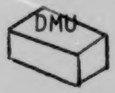


Recommended for Grade 6 Only

Concept Divergent Production

Curricular Objective

3.1.6 The child will be able to generate as many ideas as possible within a given time limit.



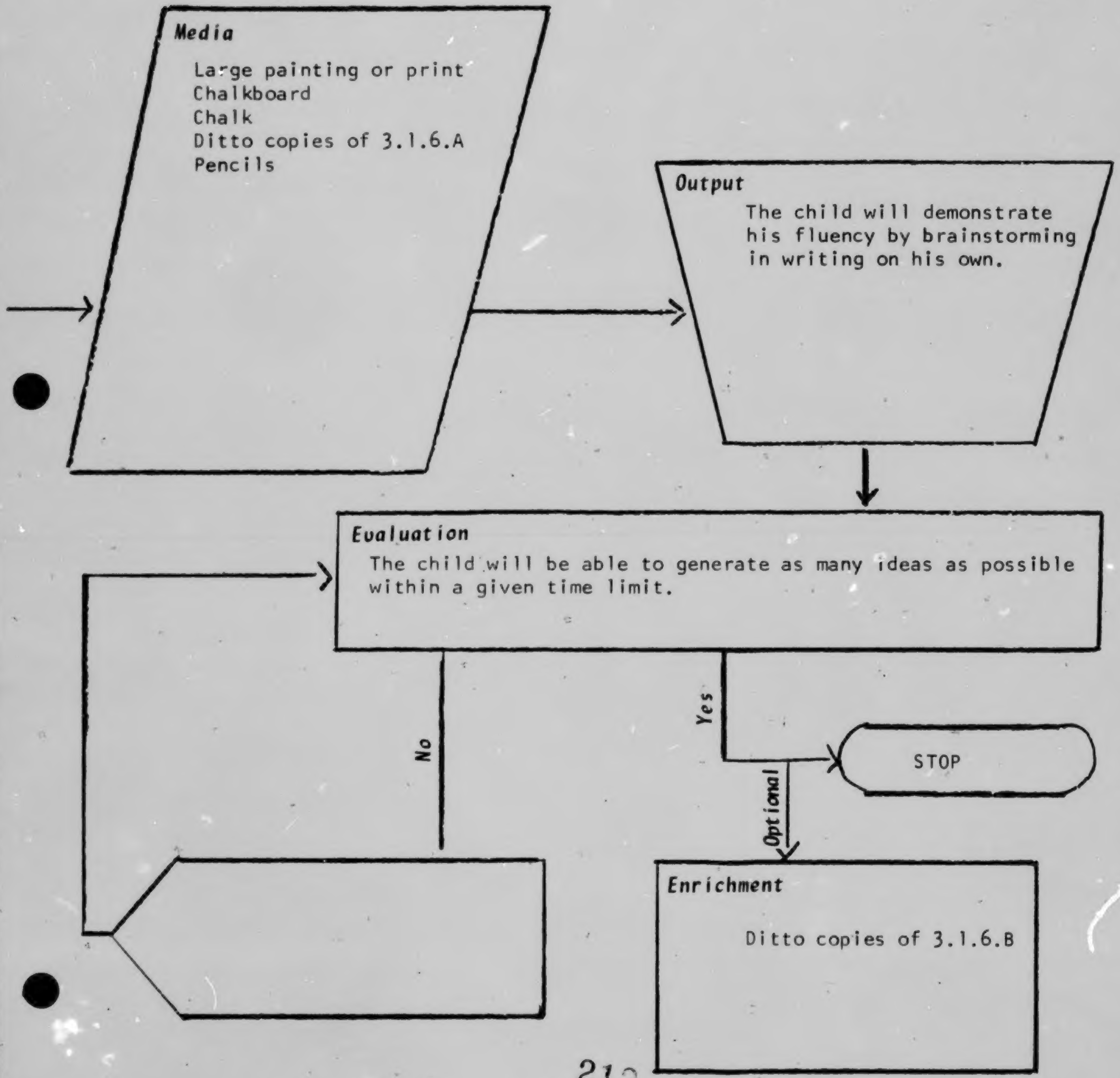
Input

Review brainstorming rules.

Learning Opportunities

I. Show an unusual painting or print and ask the children to brainstorm all possible titles they can give it.
   A. After ten minutes end the brainstorming session.
   B. Evaluate the titles on the basis of those that are the most unusual and yet appropriate

II. Distribute ditto copies of 3.1.6.A.
   A. Read and discuss the story.
   B. Each child brainstorm to see how many titles he can develop in ten minutes.
   C. Collect the papers without evaluation or let each child read his most unusual idea.



Media

Large painting or print
Chalkboard
Chalk
Ditto copies of 3.1.6.A
Pencils

Output

The child will demonstrate his fluency by brainstorming in writing on his own.

Evaluation

The child will be able to generate as many ideas as possible within a given time limit.

Enrichment

Ditto copies of 3.1.6.B

The sultry, hot day was drawing near its close as the man saw the lion drooling meanness from his jowls. He and his trusty dog, Rover, had been tracking it all day. The gun roared as the shell grazed the lion's hip. The man and his trusty dog ran after the wounded beast, but not for long for within a short distance the man fell into a grass covered hole so deep that he could not crawl out.

"Run for help," he yelled to his dog. Shortly, Rover returned with a strikingly beautiful young girl. Cautiously the man climbed the wall, holding tightly to the rope the girl had thrown down to him, but just as he reached the top his weight became too much for her and "plop" both of them fell into the deep, dark hole and died happily ever after.

TITLES

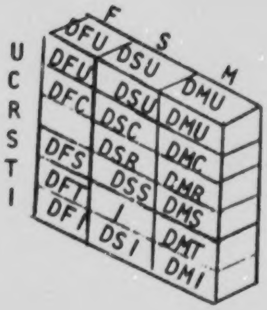
1. ________________________________
2. ________________________________
3. ________________________________
4. ________________________________
5. ________________________________
6. ________________________________
7. ________________________________
8. ________________________________
9. ________________________________
10. ________________________________
11. ________________________________
12. ________________________________
13. ________________________________
14. ________________________________
15. ________________________________
16. ________________________________
17. ________________________________
18. ________________________________

FLUENCY HAS A BETTER IDEA! ! !

1. Think of all the possible ways you could get to school in the morning.

2. Think of all the ways you could peel a banana without using your hands.

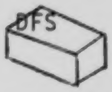
3. Think of all the titles you can for a new popular song.



Concept Divergent Production

Curricular Objective

3.2.1. Given five figures and lines, the student will construct from them twelve meaningful objects.



Input

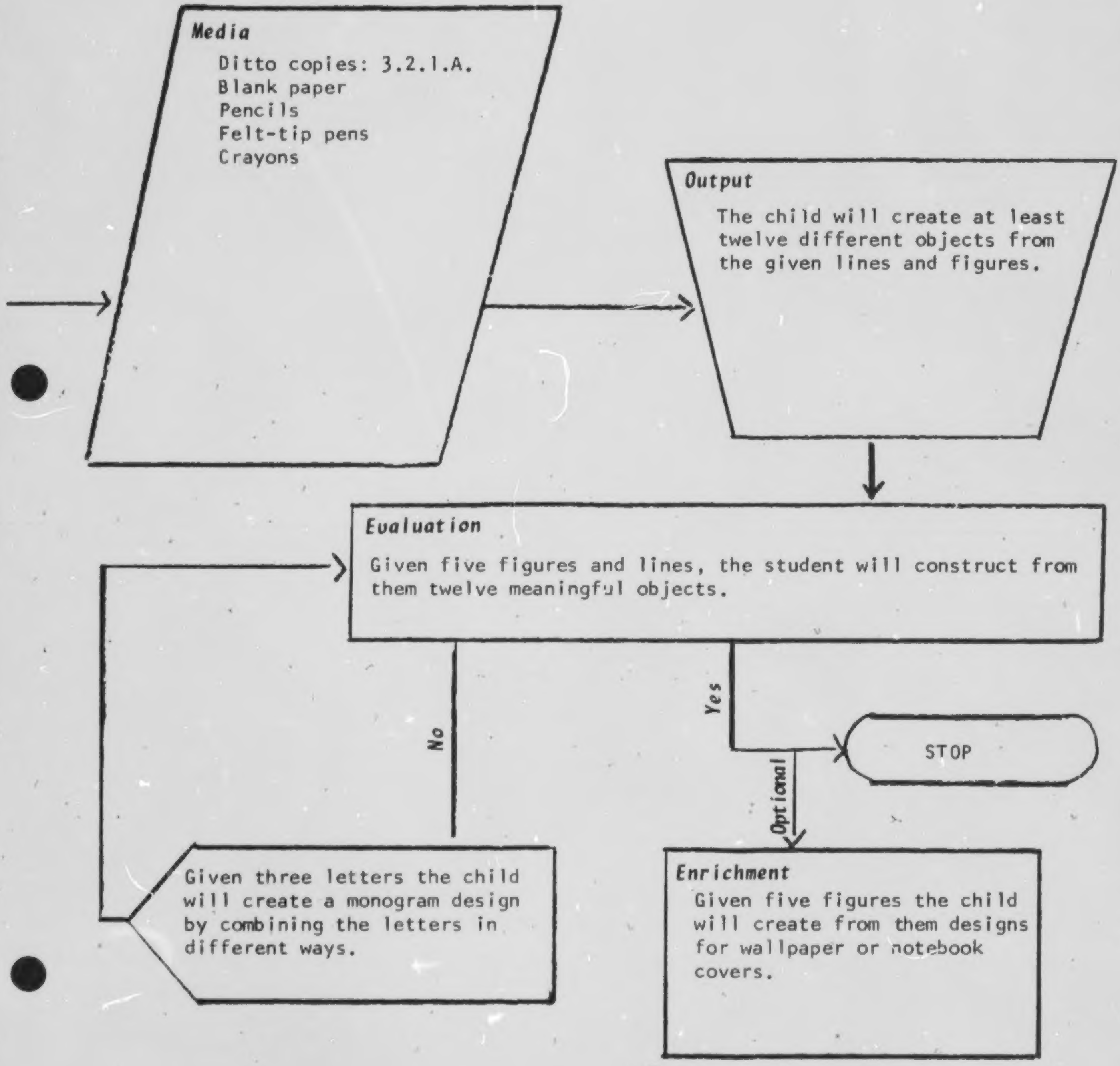
Draw a triangle on the board and discuss what objects in real life have that shape.
Repeat the discussion using any other geometric shape.

Learning Opportunities

I. Find objects in the room that are a combination of several basic shapes.

II. Show children a "6" and brainstorm what they might make from it.

III. Give each student a copy of the five figures and lines. (See: 3.2.1.A.)
  A. Each student will construct an object made from these figures.
    1. After completing one object, the student will create other objects from the same original figures.
  B. The students may have the following choices:
    1. They may use one figure only - turn it any way they want - make as many as they want - any size.
    2. They may use any combinations of the figures - as many as they want. Again, they may repeat the figures and make them any size.
  C. To help enlarge the child's figural concepts make a separate sheet of blank paper available for each object he creates.
  D. Encourage the children to turn the original figures as many ways as possible. Encourage the use of color to add to the object the child is creating.



Media

Ditto copies: 3.2.1.A.
Blank paper
Pencils
Felt-tip pens
Crayons

Output

The child will create at least twelve different objects from the given lines and figures.

Evaluation

Given five figures and lines, the student will construct from them twelve meaningful objects.

Given three letters the child will create a monogram design by combining the letters in different ways.

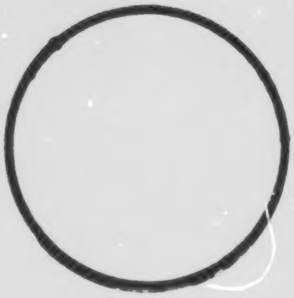
Enrichment

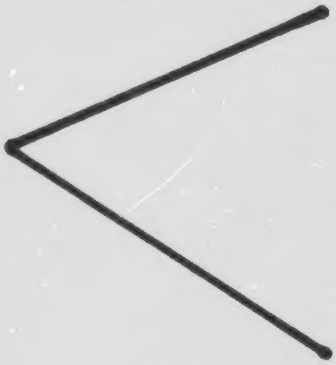
Given five figures the child will create from them designs for wallpaper or notebook covers.

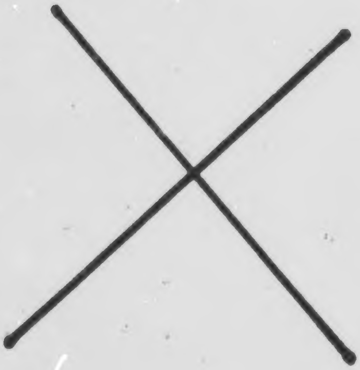
3.2.1.A.

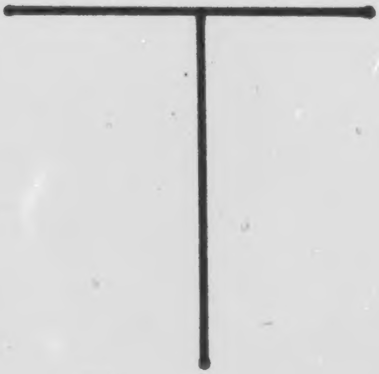
WHAT CAN YOU CREATE?

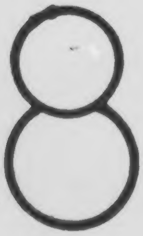
Use these shapes any way you want to make as many pictures as you can.

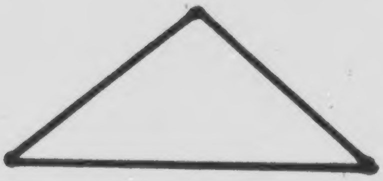


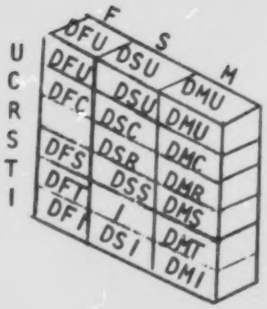










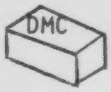


Recommended for Grade 6 Only.

Concept Divergent Production

Curricular Objective

3.2.2 Given one object the students as a group will combine it with other unlike objects to create new ideas.



Input

Discuss how new ideas are formed, how people who create new ideas are able to relate to unusual things.

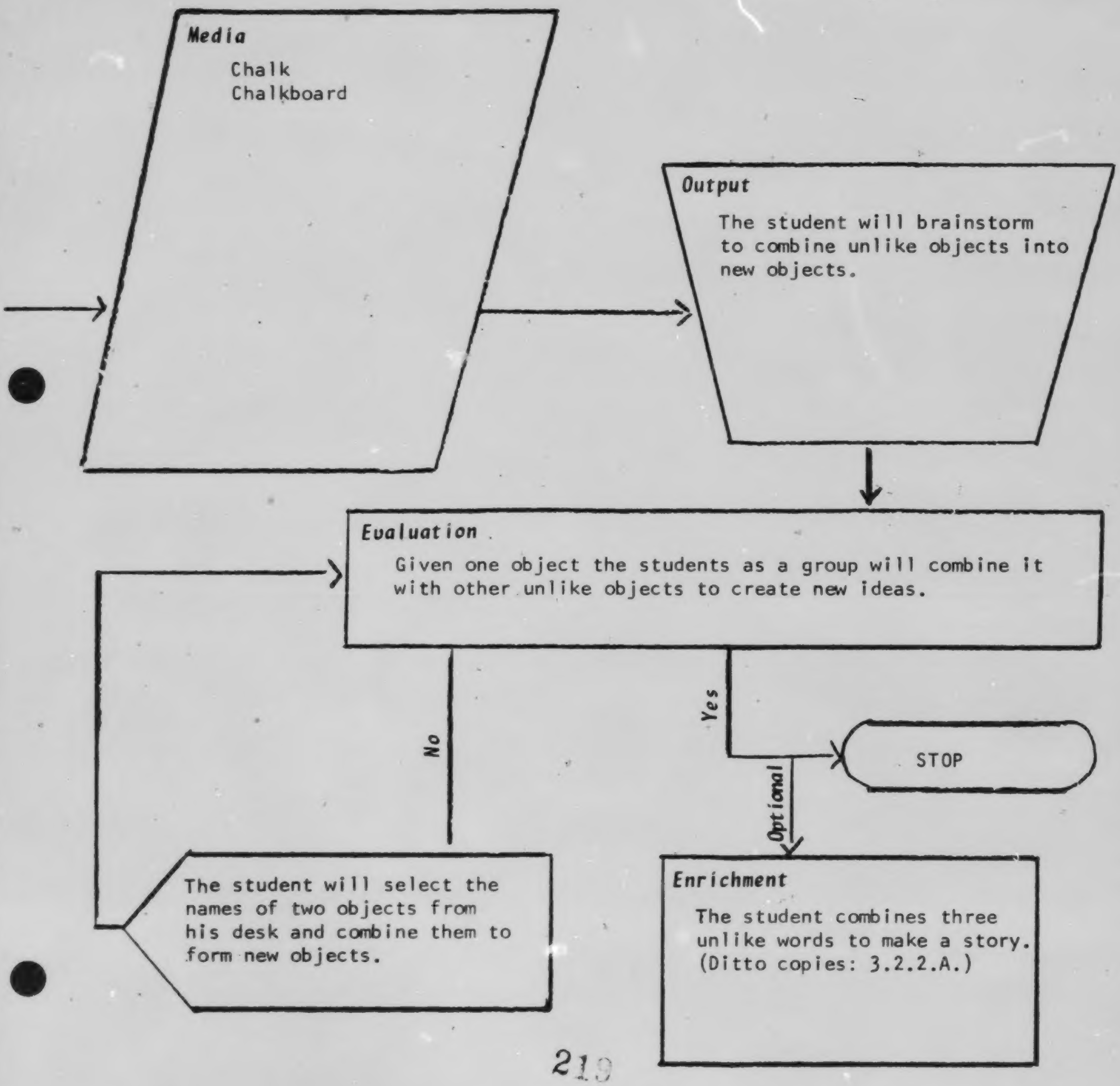
Learning Opportunities

I. Brainstorm and list on the board the things that are in the room, such as: floor, table, ceiling, curtain, flag, plant, rug, etc.

II. Select one object and by combining it with the other objects listed, make new combinations or ideas, such as table.
   A. By combining table and wall one could make a table that slides into the wall.
   B. In combining table and book you could have a library table.
   C. Combining table and chalkboard, you would make a slate desk.

III. List all the things in most children's desks.
   A. Choose one object and combine it with each of the other objects by brainstorming.
   B. List the new objects or ideas on the board.

IV. Evaluate which on the list are most unusual and why they are so.



Media

Chalk
Chalkboard

Output

The student will brainstorm to combine unlike objects into new objects.

Evaluation

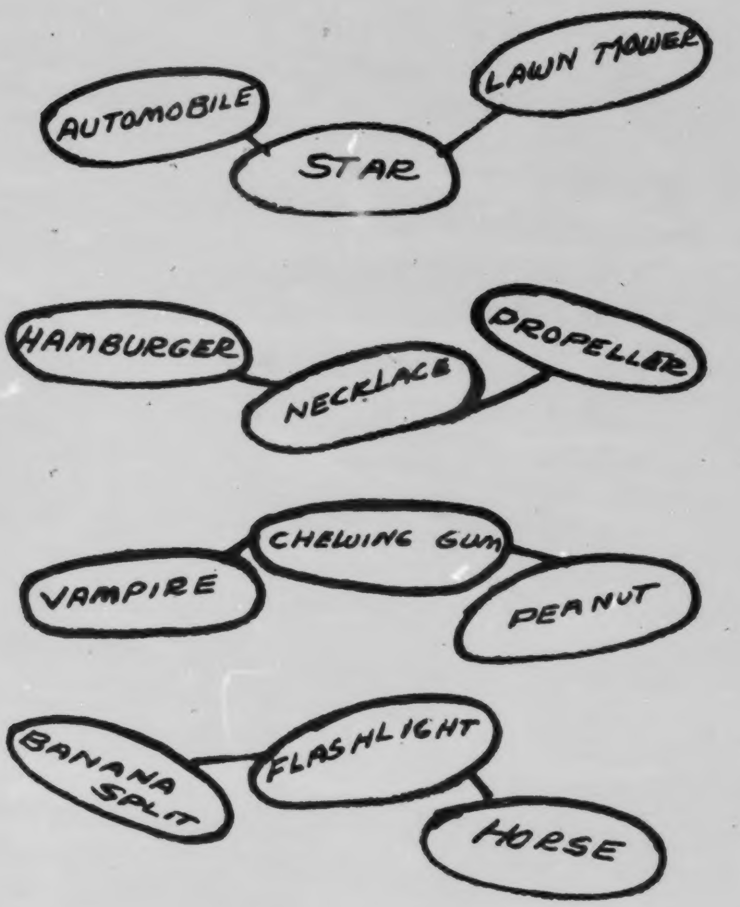
Given one object the students as a group will combine it with other unlike objects to create new ideas.

The student will select the names of two objects from his desk and combine them to form new objects.

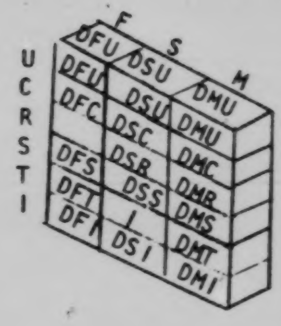
Enrichment

The student combines three unlike words to make a story. (Ditto copies: 3.2.2.A.)

3.2.2.A


AUTOMOBILE
STAR
LAWN MOWER
HAMBURGER
NECKLACE
PROPELLER
CHEWING GUM
VAMPIRE
PEANUT
BANANA SPLIT
FLASHLIGHT
HORSE

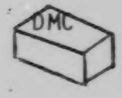
Take three unrelated words and make them into a story. It can be a sensible or a silly story.



Concept Divergent Production

Curricular Objective

3.2.3 The student will be able to produce a variety of solutions to a problem through shifting his classification system.



Input

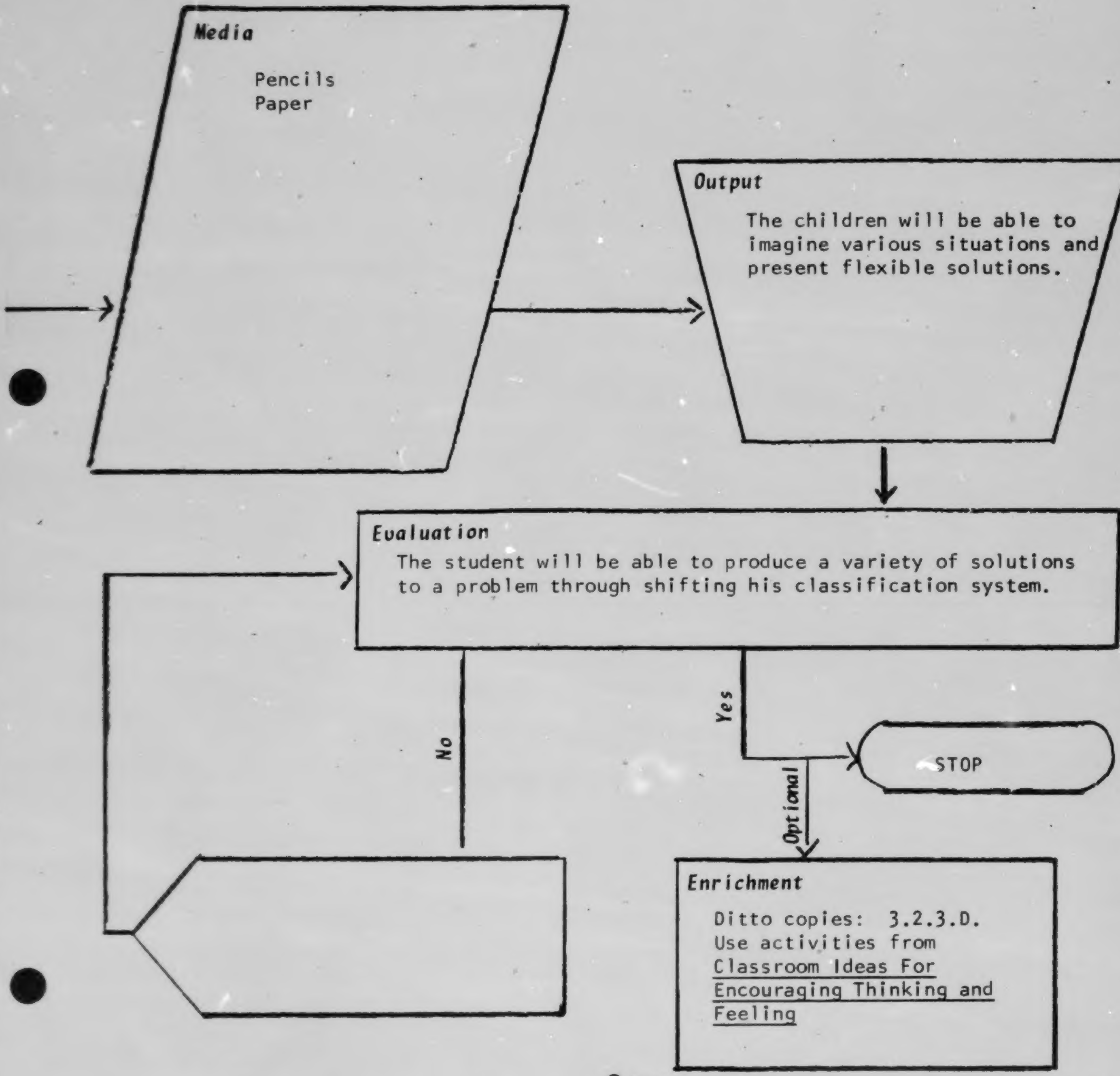
Discuss flexibility of thought--how some people see objects in combination with unrelated objects. Discuss how our minds get set into a pattern and what this does to our thinking.

Learning Opportunities

I. Play the "In a Rut" game.
  A. Have the children answer the questions orally that you give them. (See: 3.2.3.A)
  B. Ask how many were fooled by the last question.
  C. Discuss why this happens and how it applies to our thinking in everyday life.

II. Have the children write in ten minutes the ways to solve a problem. (See 3.2.3.B)
  A. Have them add up their total responses and put it at the top of the page.
  B. Have the children put an arrow by their most unusual ideas.
    1: These may be read aloud.

III. The children may act out a situation in which different viewpoints are demonstrated. (See: 3.2.3.C)



Media

Pencils
Paper

Output

The children will be able to imagine various situations and present flexible solutions.

Evaluation

The student will be able to produce a variety of solutions to a problem through shifting his classification system.

Enrichment

Ditto copies: 3.2.3.D.
Use activities from Classroom Ideas For Encouraging Thinking and Feeling

IN A RUT

I. The teacher asks:

"What does h-o-p spell?"

"What does l-o-p spell?"

"What does t-o-p spell?"

"What does m-o-p spell?"

"What does p-o-p spell?"

"What does c-o-p spell?"

"What do you do at a green light?

II. Same as above, but use:

spin

thin

bin

din

fin

grin

win

"What are aluminum cans made of ?"

Typical Problems To Write Solutions To:

(Select one to brainstorm at a time.)

1. Write as many ways as possible to handle a situation if you were lost in a cave and had laryngitis.
2. List as many ways as possible to get into your locked car without damaging any property.
3. How many ways can you think of to open a paint can that has a stuck lid?
4. How many ways can you think of to earn money for a bike?

DIFFERENT VIEWPOINTS TO DRAMATIZE

1. Discuss: "Why marshmallows should be outlawed."

   The children act like:

   1. a psychiatrist
   2. a highway engineer
   3. a P.E. instructor
   4. a dentist
   5. a home economist

2. Discuss: "Why paper should be conserved."

   The children act like:

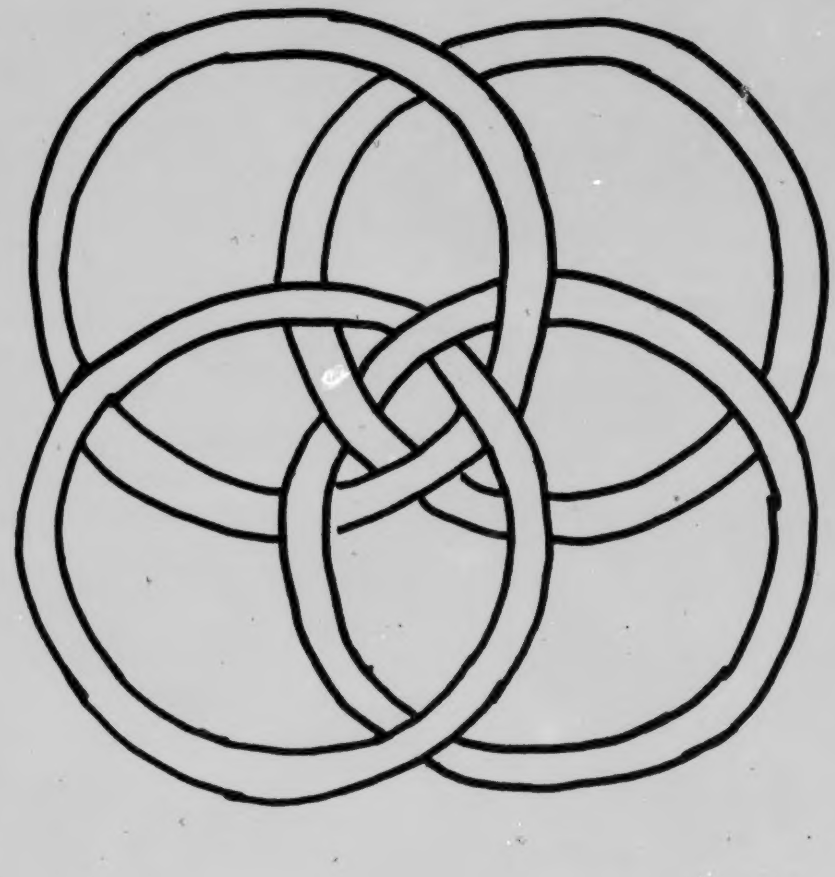
   1. a tree
   2. a student
   3. a tax man
   4. a sign-maker
   5. a box of candy

3. Discuss: "Why people living on the Sahara Desert should buy umbrellas."

   The children act like:

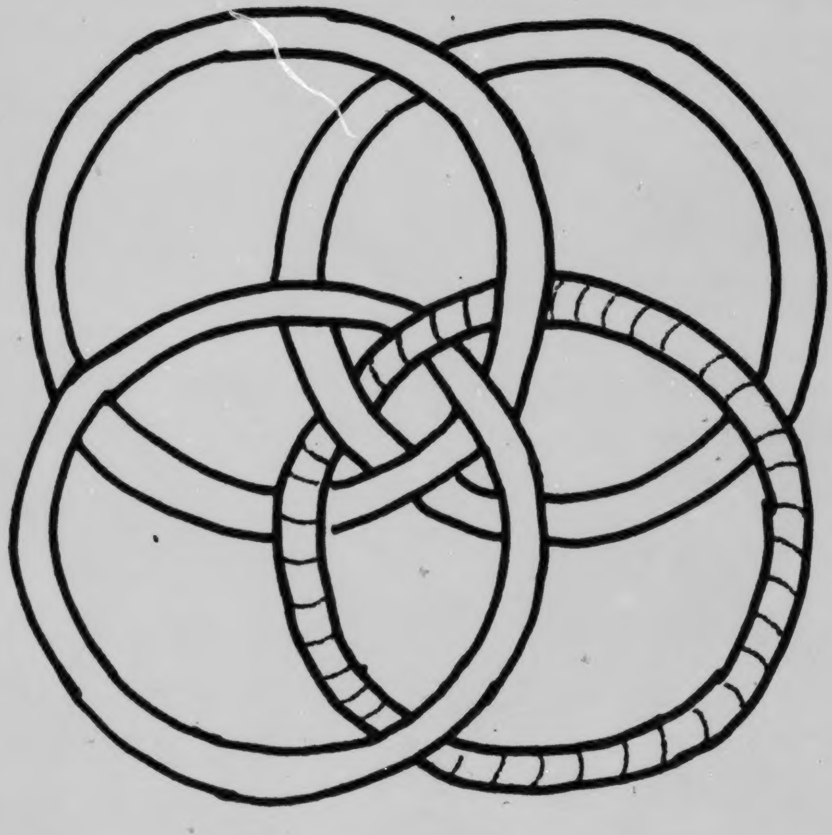
   1. a salesman
   2. a train conductor
   3. a camel driver
   4. a shopkeeper
   5. a weatherman

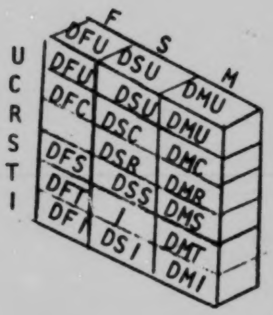
Which of the four interlocking rings must be cut so all rings will be free?



Printed with permission from American Can Company, Greenwich, Connecticut. Prints are no longer available.

ANSWER SHEET

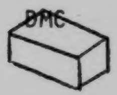




Concept Divergent Production

Curricular Objective

3.2.4 The student will generate as many ideas as possible about other uses for a hat.



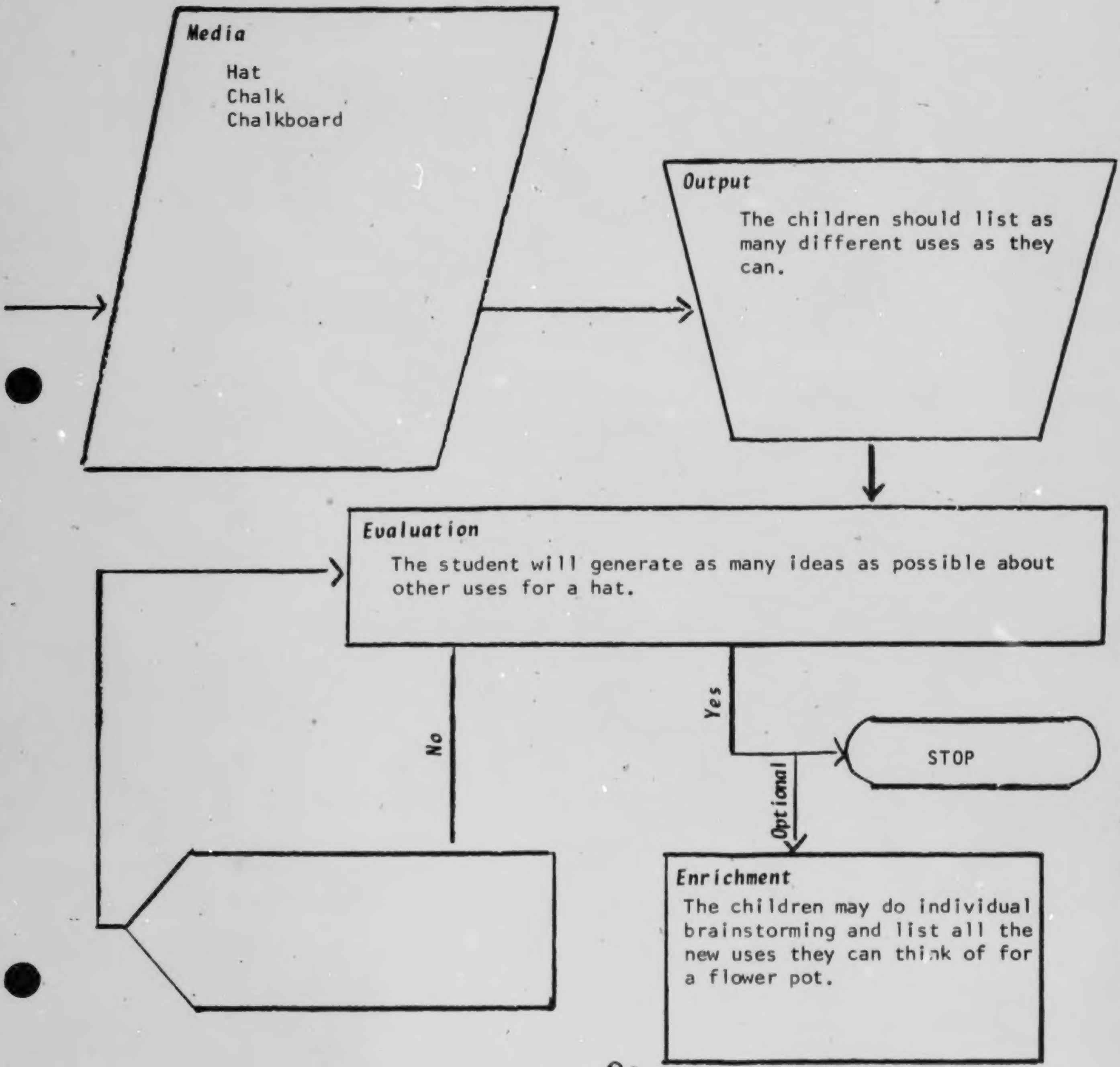
Input

Discuss the regular uses for a hat. Discuss how most people believe that this is the only way a hat can be used.

Learning Opportunities

I: Have the children determine what flexibility is.
  A. Think about what other things a hat might be used for.
  B. Have the children consider the following:
    1. Does the hat have to stay the same size? (No)
    2. Does it have to retain the same shape? (No)
    3. Does it have to have its parts arranged the same way? (No)
  C. Explain the fact that a flexible person will see the hat in many different ways.

II: Use the brainstorming method and list all the things the hat could be used for.
  A. Evaluate by determining which ideas are most unusual and yet possible in our world.



Media

Hat
Chalk
Chalkboard

Output

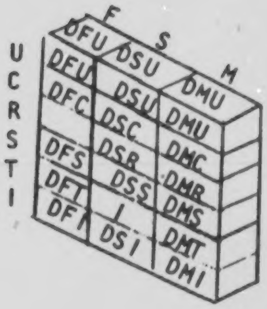
The children should list as many different uses as they can.

Evaluation

The student will generate as many ideas as possible about other uses for a hat.

No
Yes
STOP
Optional
Enrichment

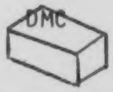
The children may do individual brainstorming and list all the new uses they can think of for a flower pot.



Concept Divergent Production

Curricular Objective

3.2.5 The student will use flexibility and originality to determine new uses for a given object.



Input

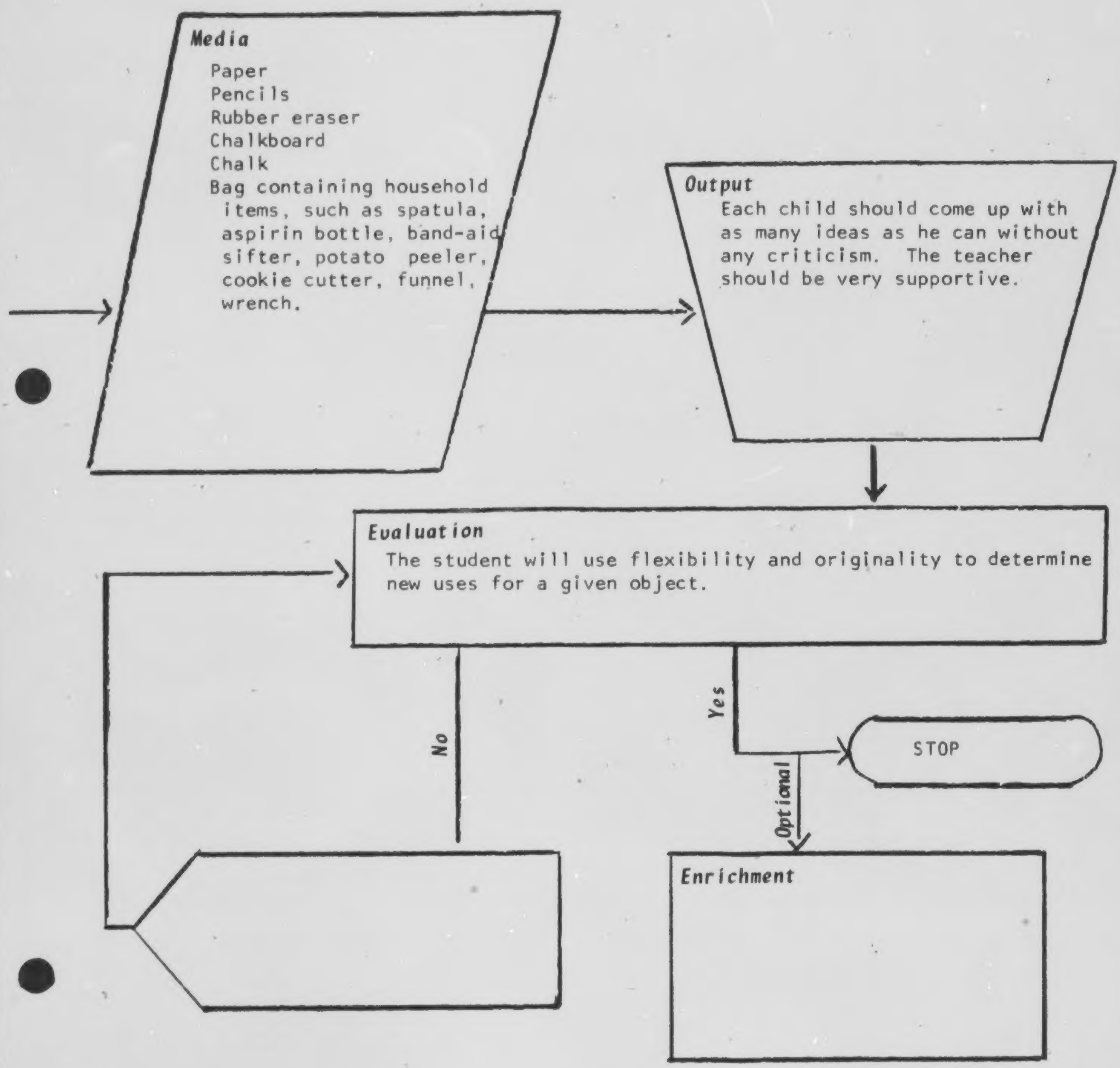
Discuss times in one's life when you had to substitute one tool for another. Discuss how we use a screwdriver at home for many different things.

Learning Opportunities

I. Brainstorm with the children all the things they could use an eraser for.
   A. Encourage them to change the shape of the eraser.
   B. Encourage them to change the texture and composition.
   C. Encourage the use of the rubber for other purposes.

II. Keep a record of all the ideas and then evaluate which ones are possible to use in our lives today.

III. Have each child reach in a bag and pull out a common household object.
   A: Have him write all the things he can think of to use it for.
   B: Share aloud four of his ideas.



Media

Paper
Pencils
Rubber eraser
Chalkboard
Chalk
Bag containing household items, such as spatula, aspirin bottle, band-aid sifter, potato peeler, cookie cutter, funnel, wrench.

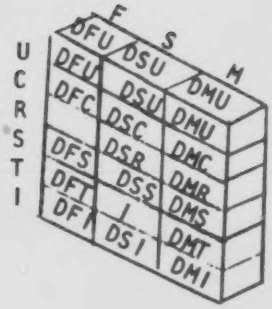
Output

Each child should come up with as many ideas as he can without any criticism. The teacher should be very supportive.

Evaluation

The student will use flexibility and originality to determine new uses for a given object.

Enrichment

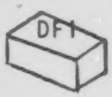


Recommended for Grade 6 only.

Concept Divergent Production

Curricular Objective

3.2.6 The student will construct as many different figures as he can from a set of Tangrams in thirty minutes.



Input

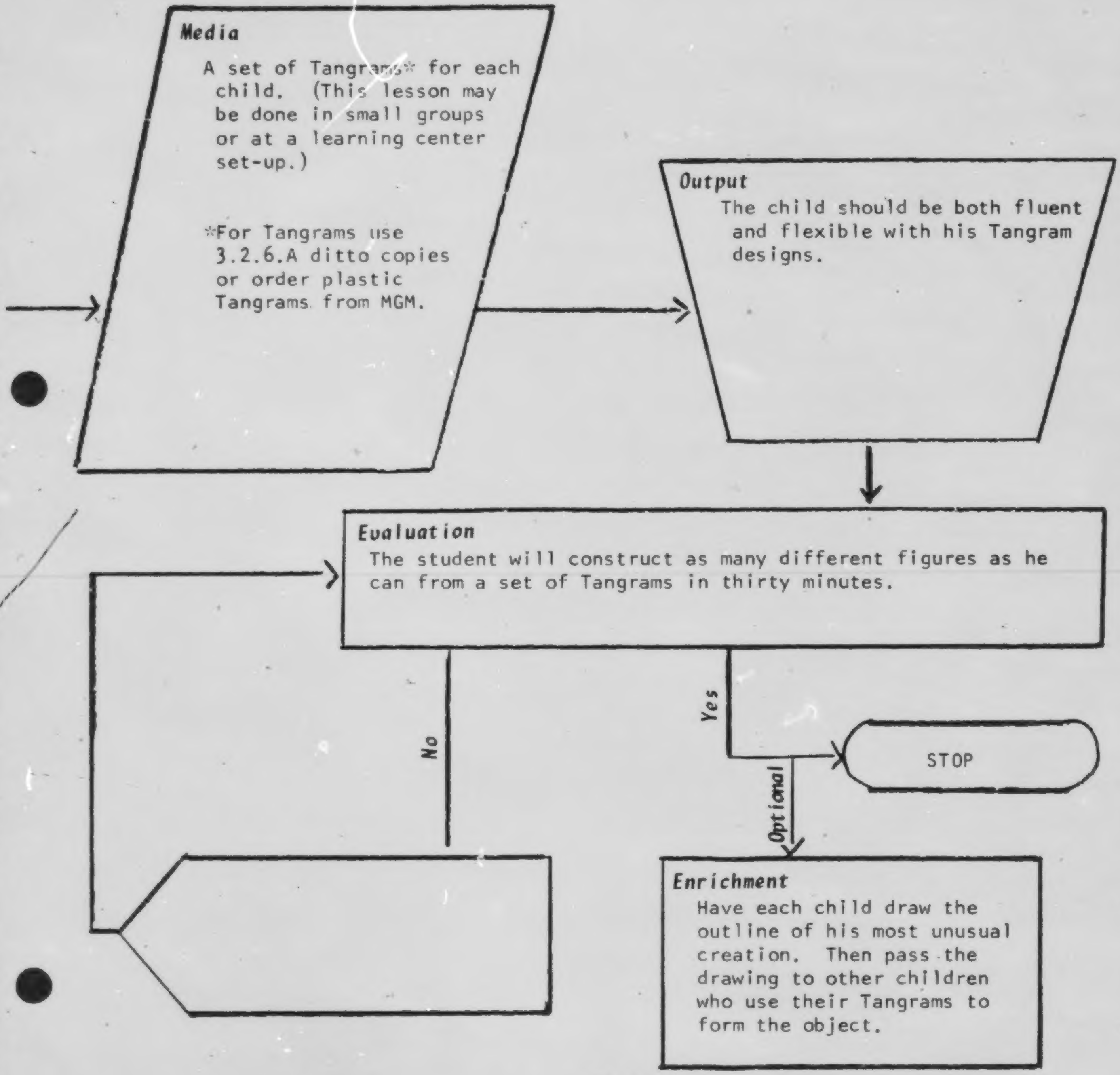
Discuss flexibility as the ability to shift your thinking to different categories.

Discuss flexibility as a part of divergent thinking and how it helps people break down classifications and see things in new ways.

Learning Opportunities

I. Give each child a set of Tangrams (See: 3.2.6.A).
    A. Ask each child to form any letter of the alphabet using all pieces.
        1. Then ask them to form three other letters the same way.
    B. Ask each child to form an animal using all the pieces.
        1. Then have them form two other animals.
    C. In fifteen minutes the child will create as many objects of his own choice as he can. (They may be buildings, transportation, appliances, etc.)

II. At the end of the time ask the children how many different things they created.



Media

A set of Tangrams* for each child. (This lesson may be done in small groups or at a learning center set-up.)

*For Tangrams use 3.2.6.A ditto copies or order plastic Tangrams from MGM.

Output

The child should be both fluent and flexible with his Tangram designs.

Evaluation

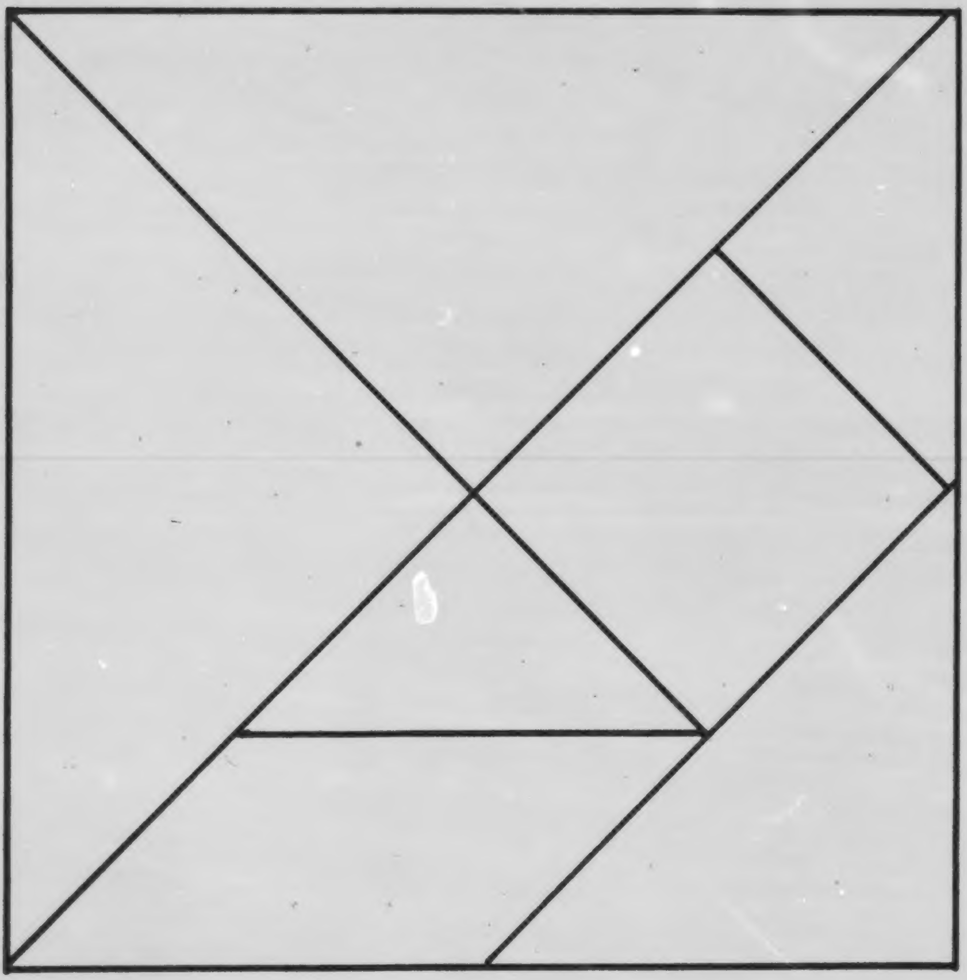
The student will construct as many different figures as he can from a set of Tangrams in thirty minutes.

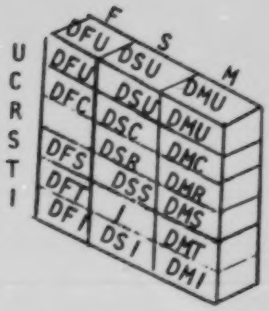
Enrichment

Have each child draw the outline of his most unusual creation. Then pass the drawing to other children who use their Tangrams to form the object.

A CHINESE DRAWING

The drawing below is called a TANGRAM (tang'ram), which means "Chinese drawing." It is a favorite puzzle among the Chinese people. Using this pattern, cut it into seven separate pieces after pasting it on a firmer material. See how many interesting patterns or designs you can make, using all seven pieces. Over 300 can be made!

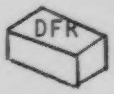




Concept Divergent Production

Curricular Objective

3.3.1 Given the names of two unlike objects the student will create a new object from them.



Input

Discuss the process of divergent thinking.

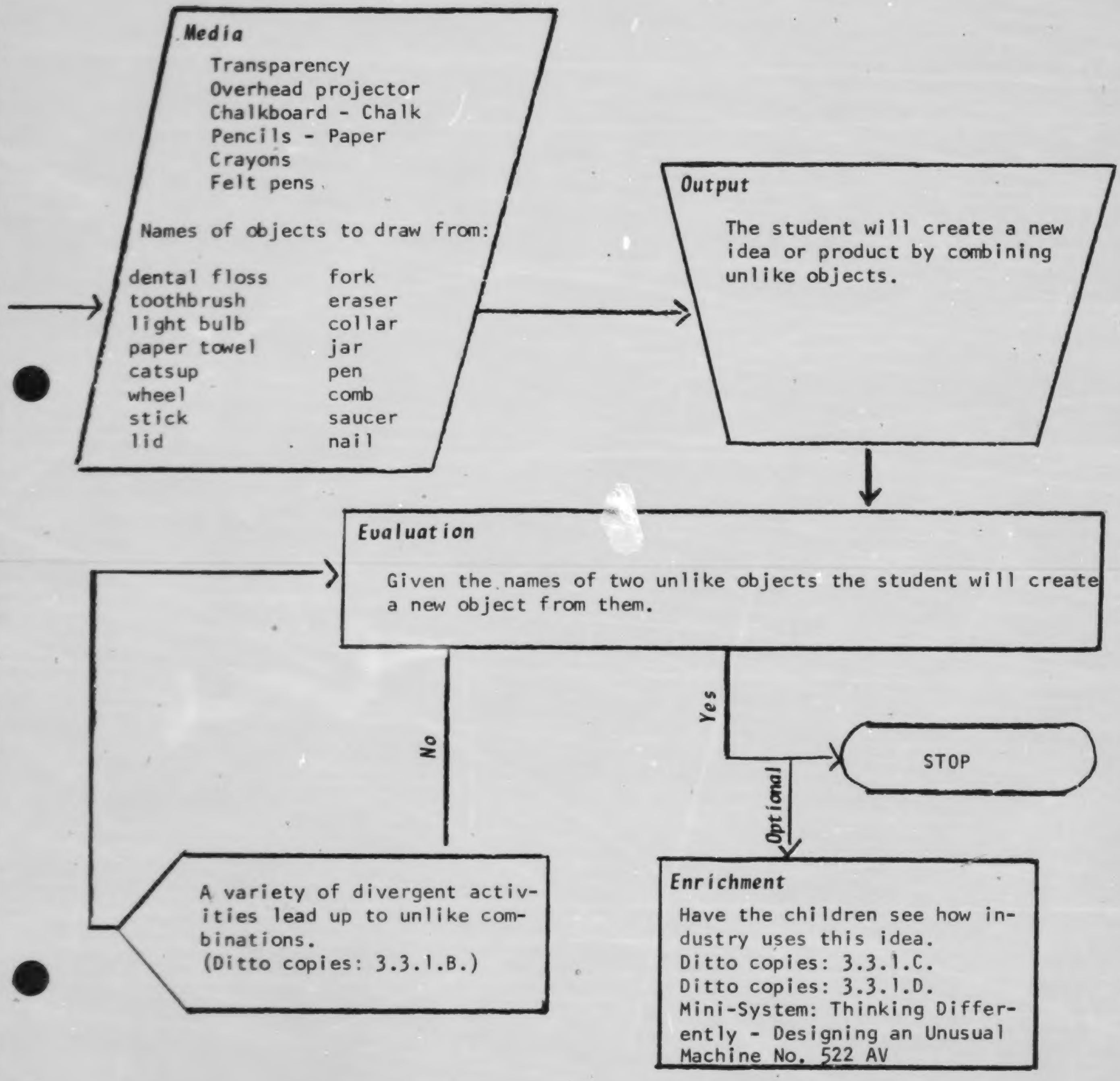
- Generating many ideas (fluency)
- Putting together unusual ideas or objects (flexibility)
- Adding extra ideas or details (elaboration)
- Creating entirely new ways or ideas (originality)
- Deferring any judgment until all the ideas are recorded
- Evaluating the ideas in terms of stated criteria

Learning Opportunities

I. Show the transparency of the door and the book. (See: 3.3.1.A)
    A. List the attributes of each in a separate column on the chalkboard.
    B. List the things that are alike about the two objects.

II. Show the transparency of the pony and the chair. (See: 3.3.1.A)
    A. List on the board the similar attributes of the two objects.
    B. List the attributes of each object in separate columns.
    C. Create new ideas or "inventions" by combining the attributes of the horse and chair.

III. Discuss flexibility and its importance in breaking down rigid classifications of things. Have the students draw out of a container the names of two unlike objects.
    A. Each student will list the attributes of each object.
    B. He will then combine the attributes to create a new object or idea.
    C. If he produces an entirely new (to him) invention, he may diagram and explain how it works.



Media

Transparency
Overhead projector
Chalkboard - Chalk
Pencils - Paper
Crayons
Felt pens

Names of objects to draw from:

dental floss	fork
toothbrush	eraser
light bulb	collar
paper towel	jar
catsup	pen
wheel	comb
stick	saucer
lid	nail

Output

The student will create a new idea or product by combining unlike objects.

Evaluation

Given the names of two unlike objects the student will create a new object from them.

A variety of divergent activities lead up to unlike combinations.
(Ditto copies: 3.3.1.B.)

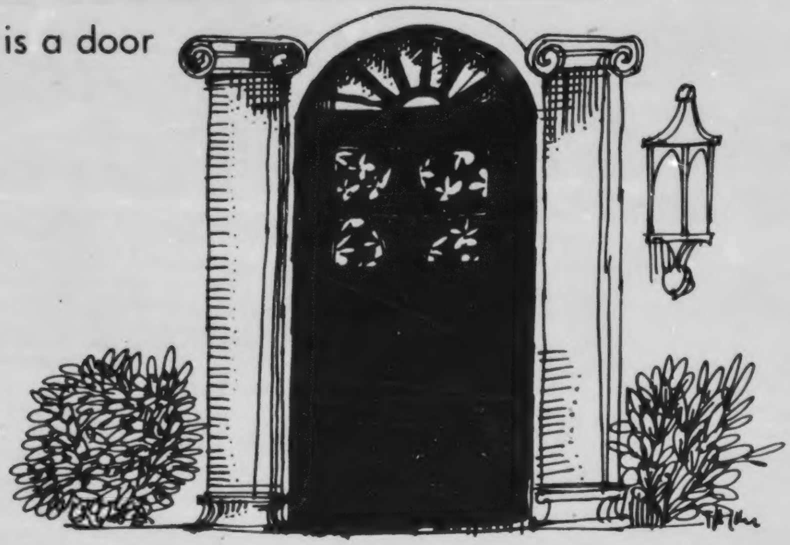
Enrichment

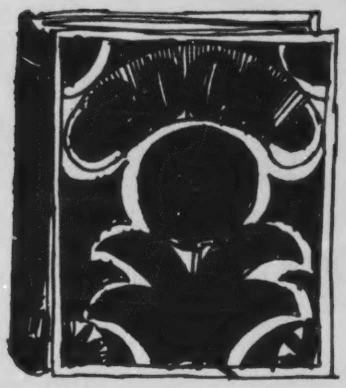
Have the children see how industry uses this idea.
Ditto copies: 3.3.1.C.
Ditto copies: 3.3.1.D.
Mini-System: Thinking Differently - Designing an Unusual Machine No. 522 AV

3.3.1.A.

Why Is a Door Like a Book?

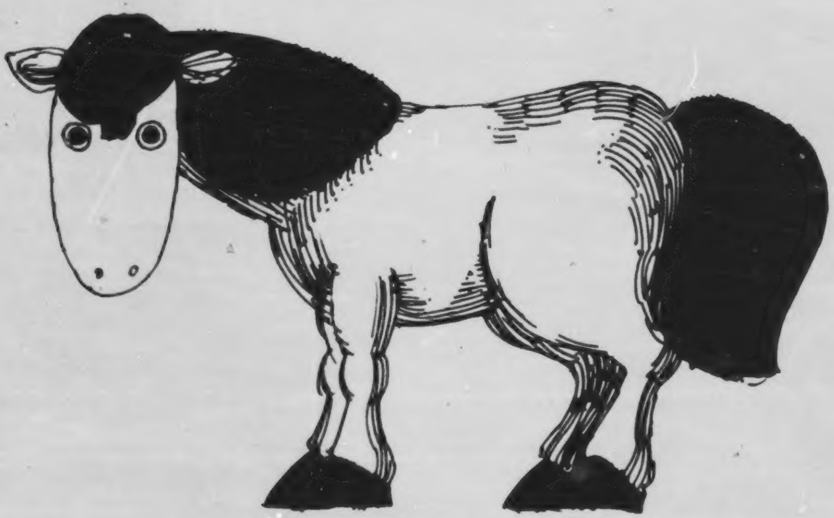
Why is a door

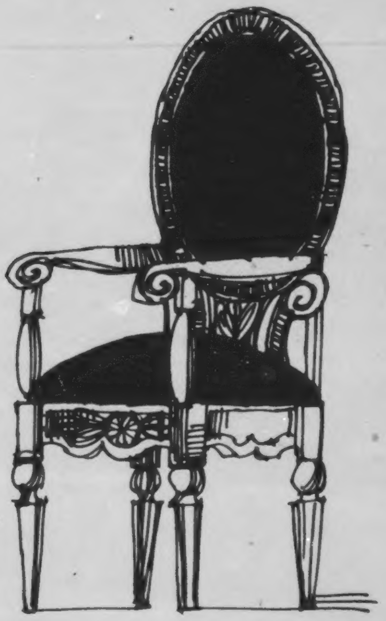




like a book?

Why are a pony





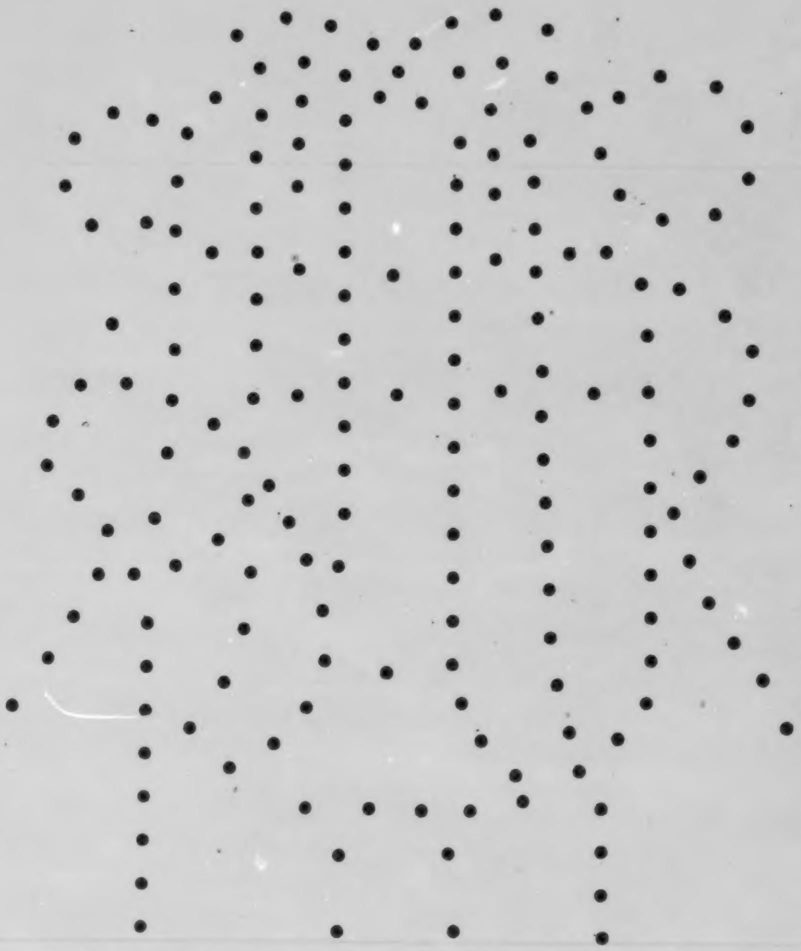
and a chair alike?

From Can You Imagine? R.E. Myers and Paul Torrance.
Ginn & Co., 1954.

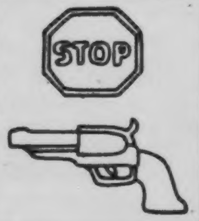
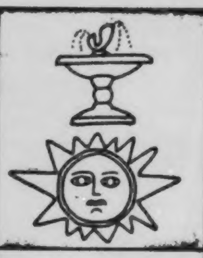
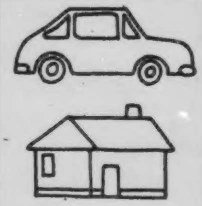
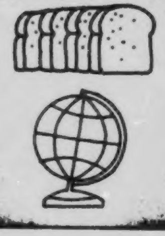
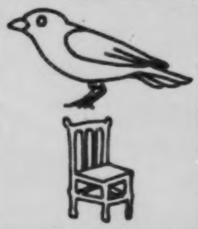
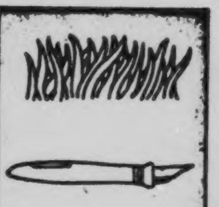
How many words can you discern in the accompanying block of letters? They may appear in a straight line, diagonally, or around corners in any direction (or a little of each).

A G L U E R A D F I X R
Y L E M B R Y O S O A J
C P L S O P H T T G N U
K I T S N O W L A R K S
E L U H J P E N R D I T
N K C O A X E G P U L A
H O K W B R D U G E T R

Connect the dots in any way you wish to create some realistic or abstract shape. Color in parts of the shape, if you wish, to accent your drawing.



Does each grouping of two things suggest a third in which elements of both are combined? How many "third things" can you derive from each grouping? Try drawing them or writing words for them in the blank spaces, being as original as possible.

					
Example: **Dead-end**					

From *Kaiser Aluminum News*, Kaiser Aluminum & Chemical Corporation.

3.3.1C

If your company is spending millions searching for new product ideas, maybe our company could save you some money.

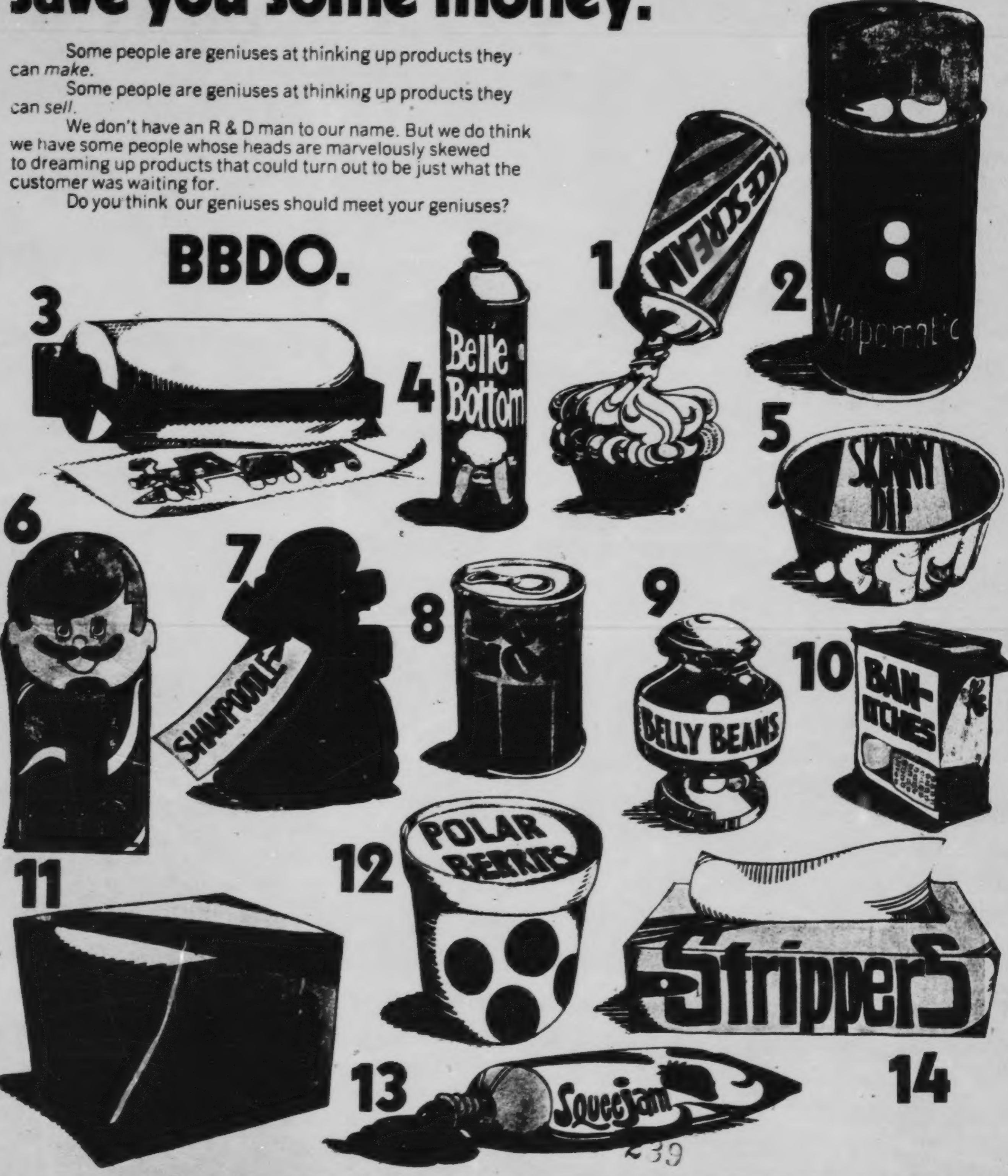
Some people are geniuses at thinking up products they can *make.*

Some people are geniuses at thinking up products they can *sell.*

We don't have an R & D man to our name. But we do think we have some people whose heads are marvelously skewed to dreaming up products that could turn out to be just what the customer was waiting for.

Do you think our geniuses should meet your geniuses?

BBDO.


1
ICE SCREAM
2
Vapomatic
3
4
Belle Bottom
5
SKINNY DIP
6
7
SHAMPOODLE
8
9
BELLY BEANS
10
BAN-DITCHES
11
12
POLAR BERRIES
13
Squeejam
StripperS
14

239

3.3.1.C.
(part 2)

1 ICE SCREAM. Instant dessert—like soft ice cream—in an aerosol can. No freezing needed. (It stores in refrigerator.) Can whistles as Ice Scream swirls out.

2 VAPOMATIC. Aerosol decongestant mist. It has a metered and timed release cycle. Placed in child's room, it releases decongestant into the air at regular intervals.

3 ROLL-A-PAD. Long roll of drawing paper that comes in a wall dispenser, like paper towels. Ideal for a kid's room.

4 BELLE BOTTOM. Aerosol spray you apply to diaper before putting diaper on your baby. Prevents diaper rash by neutralizing acids in urine.

5 SKINNY DIP. Line of low-calorie cottage-cheese dips in table-top containers. Twice the protein of other dips, but only half the calories.

6 BLUE MUSTACHE. A chapstick with a decongestant in it. Applied under child's nose, it relieves congestion and soothes rawness that comes from nose blowing.

7 SHAMPOODLE. No-tears baby shampoo in a plastic squeeze toy the shape of a dog. Dog barks when squeezed, keeps child amused during shampoo.

8 DOG-NOG. Vitamin and protein-enriched drink for dogs. Low in calories, can be mixed with dry dog food or given to dog straight.

9 BELLY BEANS. Mild antacid for children 6 to 12 years old. Settles stomachaches caused by nervous tension, colds, flu.

10 BAN-ITCHES. Plastic bandage strips impregnated with antihistamine to take the itch out of insect bites and minor rashes.

11 QUOTA. A dog food for indoor dogs, dogs that rarely get the exercise they require. Maintains proper balance between food intake and energy output.

12 POLAR BERRIES. Low-calorie dessert filled with whole berries. Tastes like ice cream, but has only half the calories. Comes in strawberry, blueberry, raspberry.

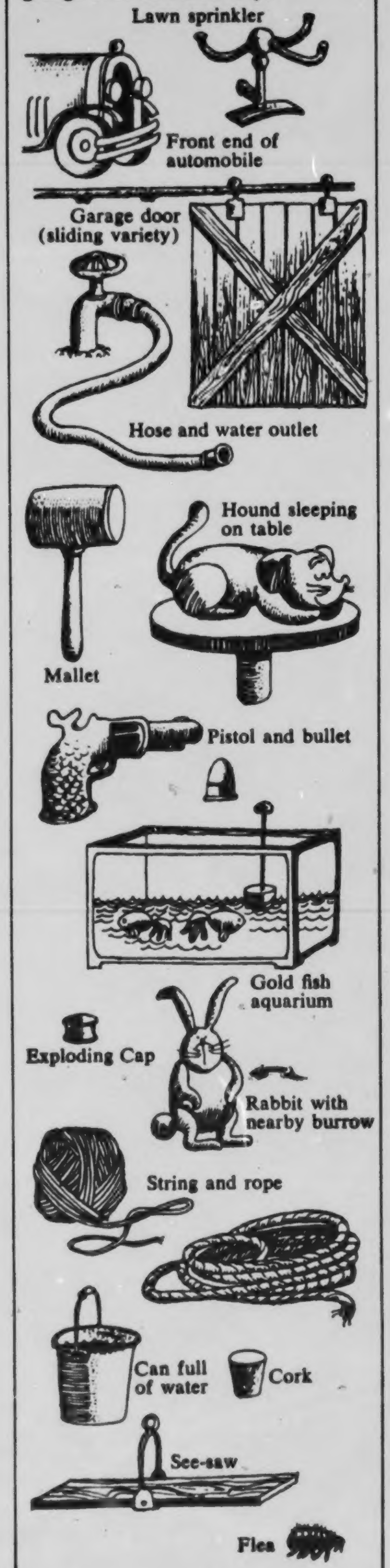
13 SQUEEJAM. A line of jams and jellies in unbreakable tubes. Messless way for kids to make sandwiches.

14 STRIPPERS. Pre-treated nail-polish-remover tissues. Contain both polish remover and nail conditioner (to keep nails from drying out).

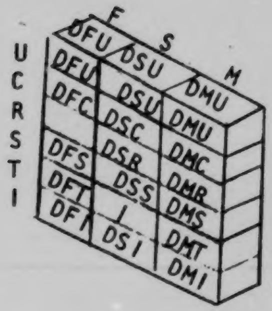
Batten, Barton, Durstine & Osborn, Inc.
383 Madison Ave, New York, N.Y. 10017
Atlanta, Boston, Cleveland, Dallas, Detroit, Los Angeles,
Minneapolis, Montreal, Pittsburgh, San Francisco, Toronto.
In Europe: Frankfurt, London, Milan, Paris, Vienna.

3.3.1.D.

IMAGINATION IS THE KEY.
Given the following elements, can you devise a way to open a garage door automatically?


Lawn sprinkler
Front end of automobile
Garage door (sliding variety)
Hose and water outlet
Hound sleeping on table
Mallet
Pistol and bullet
Gold fish aquarium
Exploding Cap
Rabbit with nearby burrow
String and rope
Can full of water
Cork
See-saw
Flea

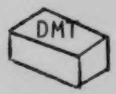
From *Kaiser Aluminum News*, Kaiser Aluminum & Chemical Corporation.



Concept Divergent Production

Curricular Objective

3.3.2 The student will be able to produce original comparisons between two unrelated objects.



Input

Discuss similes and analogies.

Discuss how the comparisons made in the similes might have originated.

Have children create their own similes for:

As quick as a ....
As quiet as a ....
As rough as a ....
As happy as a ....

Learning Opportunities

I. Discuss how to find similar attributes between two unlike things.

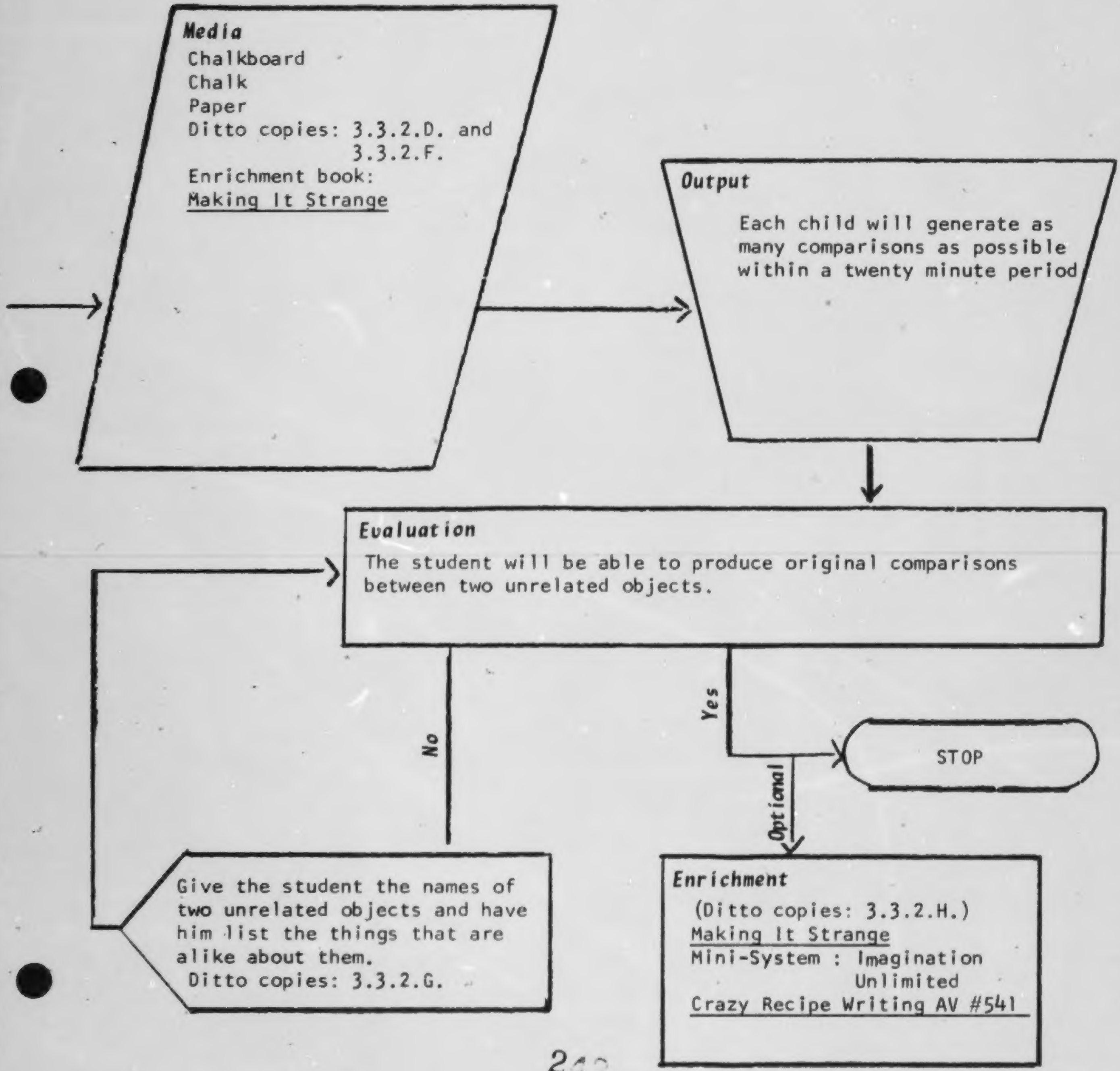
II. Use the word "smoke" and discuss what other things you might think of (See: 3.3.2.A.)

III. List the words "train" makes you think of (See: 3.3.2.B.)

IV. Have the children do "wax" on their own (See: 3.3.2.C.)
  A. Analyze the last word with "telephone" and see how the two words compare.

V. Let each child try a word of his own using the same format (See: 3.3.2.D.)

VI. Discuss how the more words we know helps to generate more semantic ideas.
  A. As a group discuss "Which lasts longer - an ice cube or a cookie?" (See: 3.3.2.E.)
  B. Each child will then do his own various examples (See: 3.3.2.F.)



Media
Chalkboard
Chalk
Paper
Ditto copies: 3.3.2.D. and
3.3.2.F.
Enrichment book:
Making It Strange

Output

Each child will generate as many comparisons as possible within a twenty minute period

Evaluation

The student will be able to produce original comparisons between two unrelated objects.

Give the student the names of two unrelated objects and have him list the things that are alike about them.
Ditto copies: 3.3.2.G.

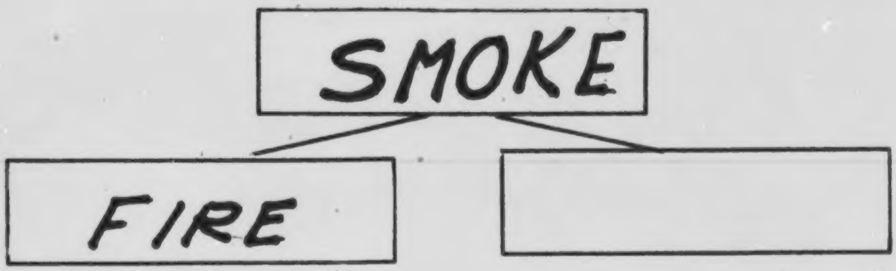
Enrichment
(Ditto copies: 3.3.2.H.)
Making It Strange
Mini-System : Imagination Unlimited
Crazy Recipe Writing AV #541

3.3.2.A.

DANCE OF THE BOXES

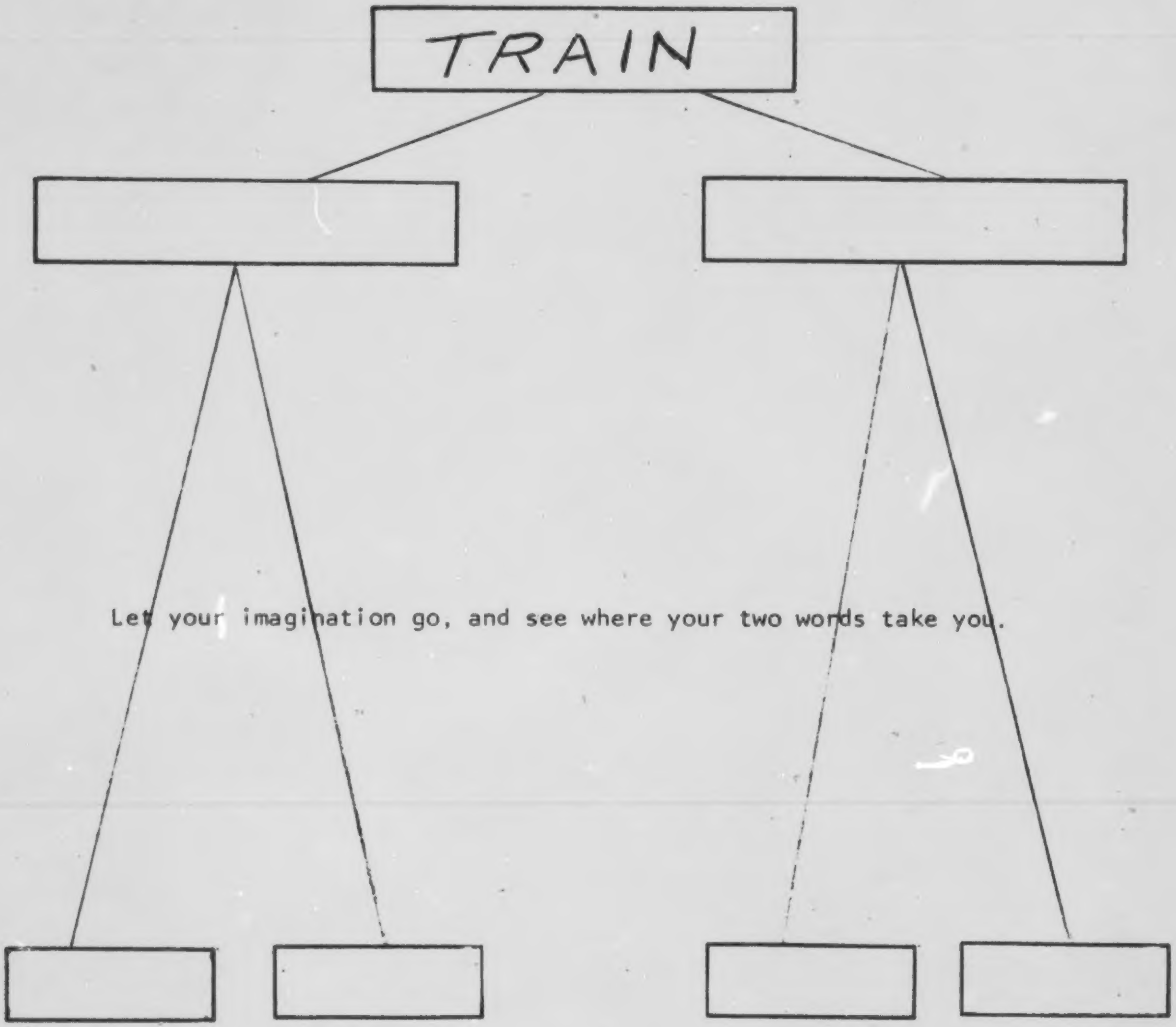
In this lesson let your mind wander from word to word.
The first word will be given to you.
Write in the word or words it makes you think of.

For example, when you see the word SMOKE
you might think of FIRE.
What other word does SMOKE make you think of?
Choose a word that doesn't mean the same thing as FIRE.
Write it in the blank box.



From Making It Strange, Harper & Row Publishers, 1968.

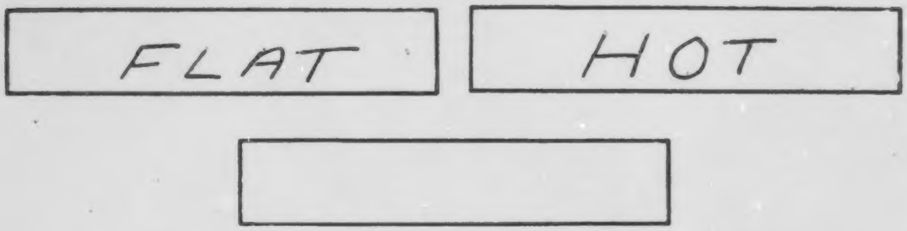
Now try one on your own.
What two words come to mind when you think of the word TRAIN?



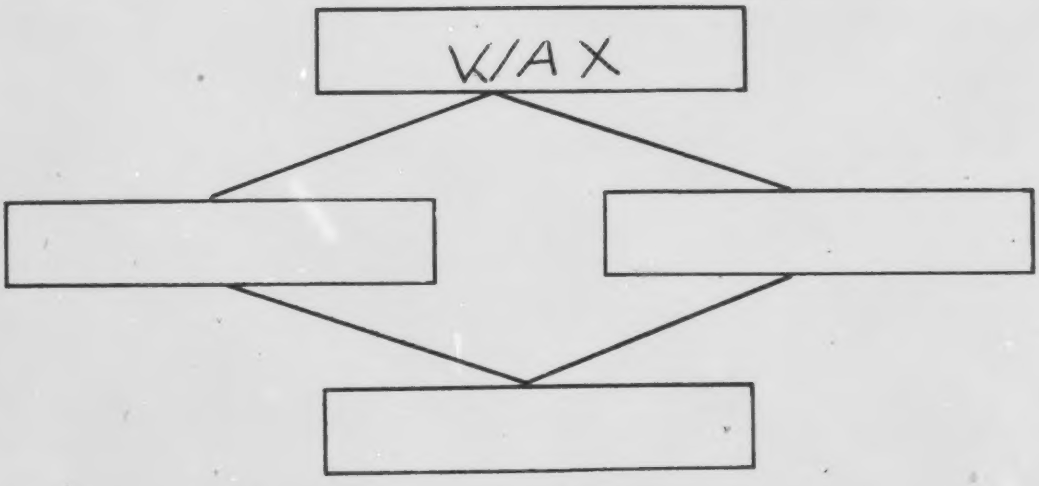
Let your imagination go, and see where your two words take you.

From Making It Strange, Harper & Row, Publishers, 1968.

It is fun to see what word comes to mind after you have looked at two other words. For example, what do you think of when you see the words FLAT and HOT? Write your answer in the blank box.



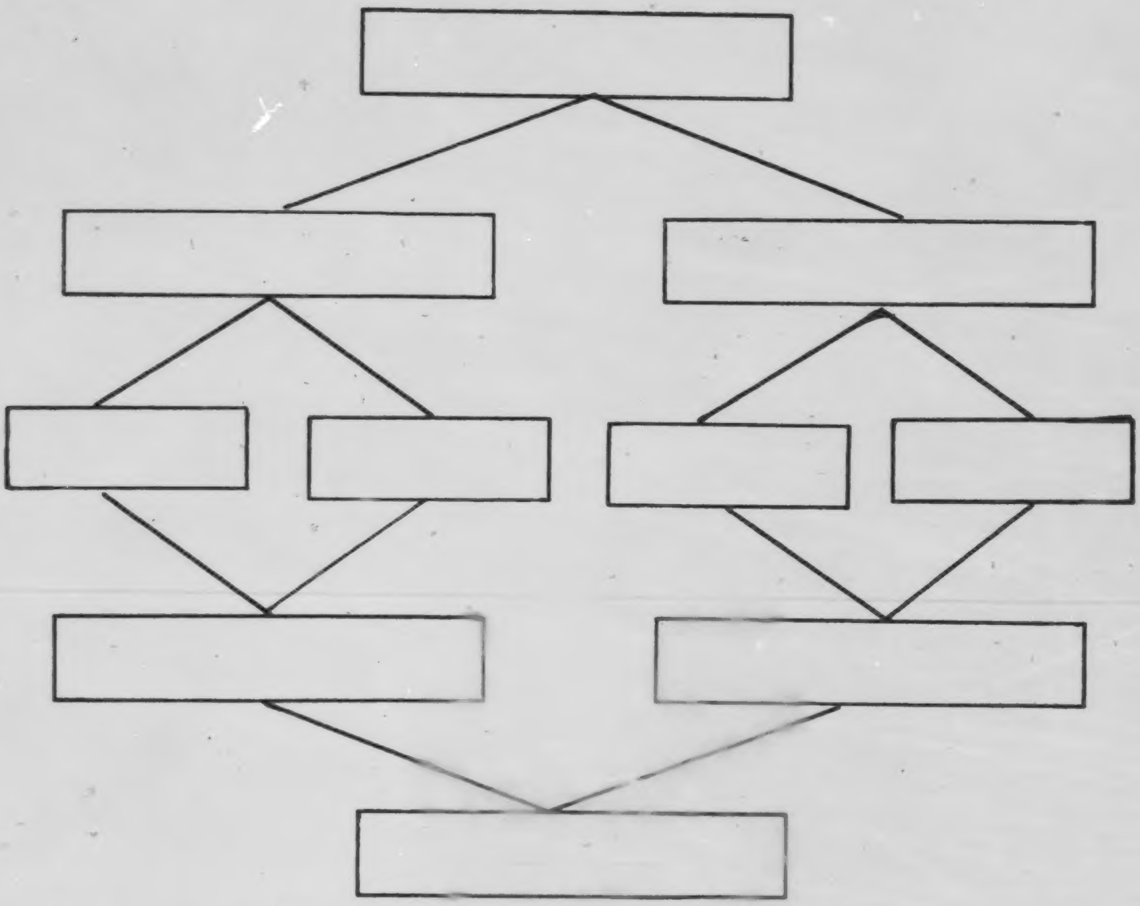
Use the word WAX to start this Dance Of The Boxes.



From Making It Strange, Harper & Row Publishers, 1968.

3.3.2.D.

Try a Super Box Dance!
Just follow the lines
and write your words in the blank boxes.



How is your last word like your first word?

How is it different?

From Making It Strange, Harper & Row Publishers, 1968.

3.3.2.E.

WHICH IS FASTER - A TABLE OR A CHAIR? - PART I

In this lesson
you will compare things that usually are not compared,
so let your imagination guide you.
There are no right or wrong answers.
Pick the word that excites you, and circle it.
Then explain your choice.

Which LASTS longer?

AN ICE CUBE A COOKIE

Why? ____

____

____

Which is QUIETER?

A KNIFE A WHISPER

Why? ____

____

____

From Making It Strange, Harper & Row Publishers, 1968.

Which WEIGHS more?

A SCREAM　　　A BAG OF POTATOES

Why? ______________________________

____

____

____

Which is FASTER?

A TABLE　　　A CHAIR

Why? ______________________________

____

____

____

From Making It Strange, Harper & Row Publishers, 1968.

Name ______________________________ Grade ______________

Questions similar to the following -

In what way are the following opposites alike?

1. fat and thin
2. hot and cold
3. young and old
4. kind and cruel
5. sweet and sour
6. rough and smooth
7. tall and short
8. happy and sad
9. open and closed
10. above and below

From Making It Strange, Harper & Row Publishers, 1968.

WHICH TAKES UP MORE SPACE - A PICKLE OR A PAIN?

There are no right or wrong answers
to any of the questions in MAKING IT STRANGE
Use your imagination to answer each question
in a way you like best.
The first question in this exercise has been filled in
with two different answers.
Both answers are right - it just depends
on your imagination.

Which TAKES UP MORE SPACE?

A PICKLE A PAIN

Why? 1. A pickle takes up more space because a pickle you can see; a pain you cannot see.

2. A pain takes up more space because when you have a headache it fills up your whole head.

From Making It Strange, Harper & Row Publishers, 1968.

The rest of this lesson lets you compare things
in a topsy-turvy world.
Just circle the word
that answers each question in a way you like best.

Which **WEIGHS** more?

A COUGH   A SNEEZE

Why? ______________________________

____

____

Which is **LOUDER**?

A SMILE   A FROWN

Why? ______________________________

____

____

From Making It Strange, Harper & Row Publishers, 1968.

3.3.2.H.

Which is THINNER?

DAY NIGHT

Why? ____

____

____

Which WEIGHS more?

ZERO ONE

Why? ____

____

____

From Making It Strange, Harper & Row Publishers, 1968.

Which is **HEAVIER**?

A MOUNTAIN AN OCEAN

Why? ____

____

____

Which is **ROUGHER**?

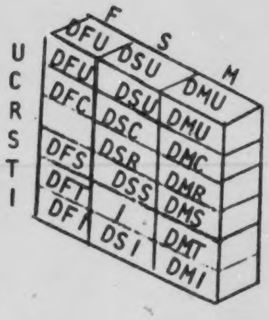
YELLOW PURPLE

Why? ____

____

____

From Making It Strange, Harper & Row Publishers, 1968.

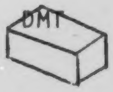


Recommended for Grade 6 only

Concept Divergent Production

Curricular Objective

3.3.3 The student will demonstrate his knowledge of idioms by naming as many as he can and illustrating their literal meanings.



Input

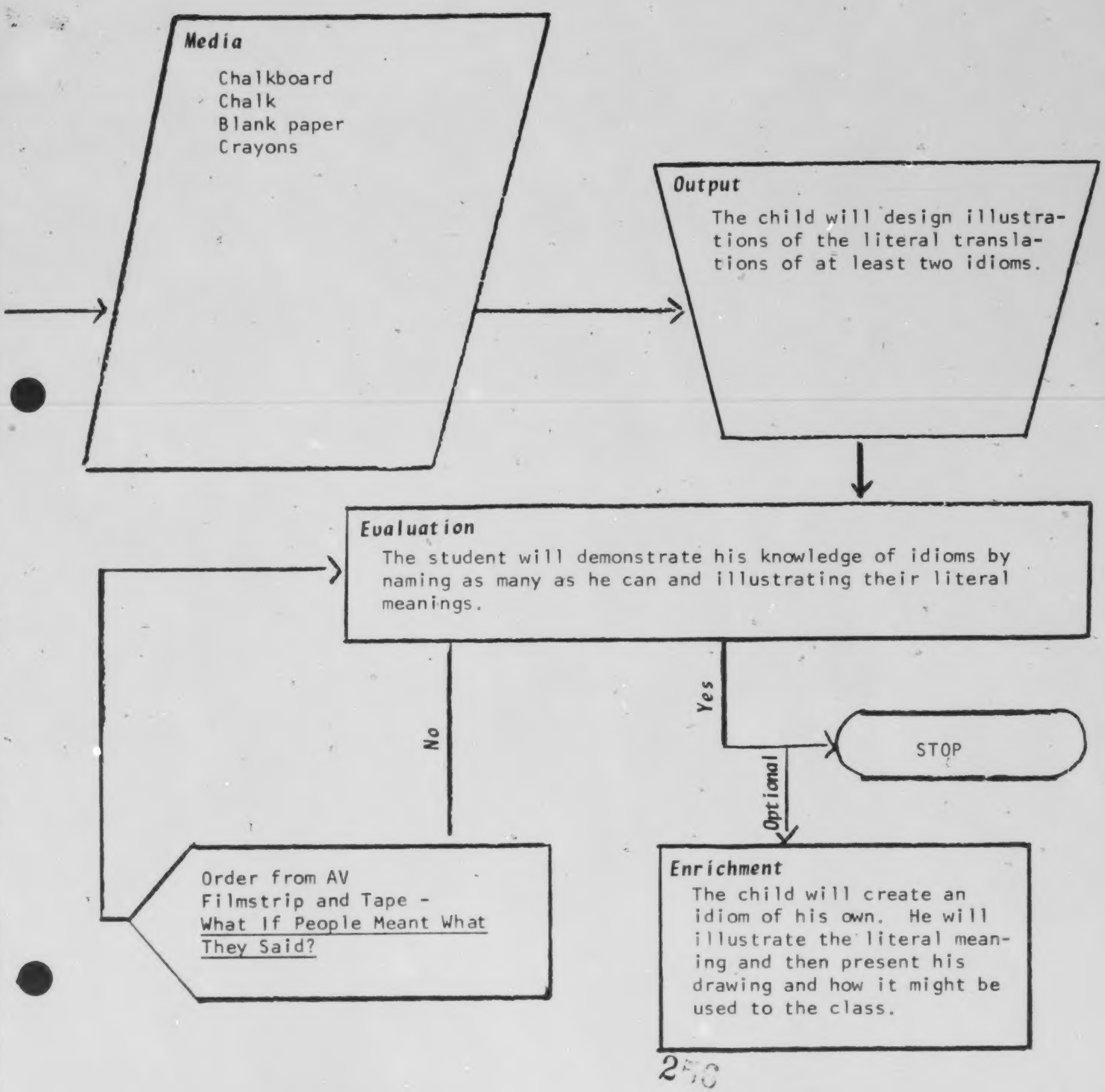
Discuss common expressions of speech. Discuss how they might come about. Determine if any child knows what an expression used by certain people is called --refer to the dictionary for the meaning of "idiom".

Learning Opportunities

I. Give the children one or two examples of an idiom (See: 3.3.3.A)
   A. Brainstorm with the children to list the idioms they know.
   B. Ask the children to interpret the meaning of each idiom.

II. Discuss what it would be like if we used the literal meaning of the idiom.

III. Have each child illustrate two or more idioms of his choosing.
   A. The child should show the literal meaning of the idiom in his illustration.



Media

Chalkboard
Chalk
Blank paper
Crayons

Output

The child will design illustrations of the literal translations of at least two idioms.

Evaluation

The student will demonstrate his knowledge of idioms by naming as many as he can and illustrating their literal meanings.

Order from AV
Filmstrip and Tape - What If People Meant What They Said?

Enrichment

The child will create an idiom of his own. He will illustrate the literal meaning and then present his drawing and how it might be used to the class.

IDIOMS

An idiom is an expression that is peculiar to that particular language or people. It cannot be translated literally, but it colors the language. For example, the Americans say, "Hi"; the British, "How do you do?"; the German, "How does it go with you?"; and the French, "How do you carry yourself?"

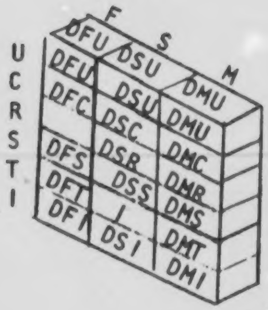
Americans: "I'm Henry Brown." British: "My name is Henrietta Smythe."

Spanish: "I call myself Juan Hernandez."

Do these idioms mean literally what they say?

1. I fell for you. ______
2. Her eyeballs popped out. ______
3. She has a broken heart. ______
4. Her teeth were made of pearls. ______
5. I jumped out of my skin. ______
6. He carried her home. ______
7. He bit the dust. ______
8. Get the cobwebs out of your mind. ______
9. Mother drove her home. ______
10. She's an angel. ______

Write as many idioms as you can. Use another sheet of paper if there is need.

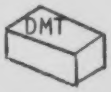


Recommended for Grade 6 only

Concept Divergent Production

Curricular Objective

3.3.4 The child will demonstrate his understanding of sayings by playing "The Matchless Proverbial Semantics" game.



Input

Discuss sayings in everyday life.

Discuss what the children think sayings are for.

Have the children give examples of familiar sayings. They should try to interpret these sayings and explain what they mean.

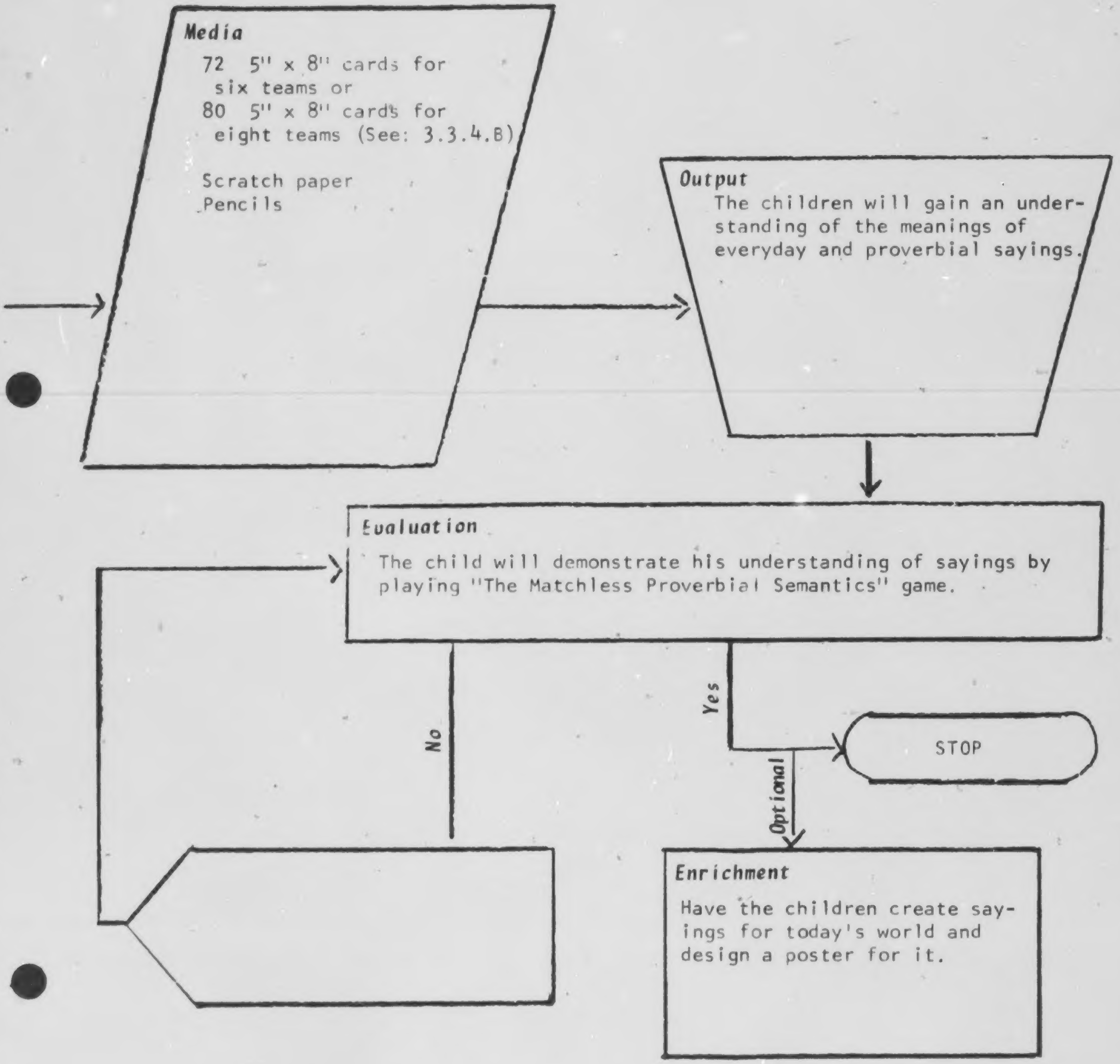
Discuss proverbs and the kinds of sayings they are.

Learning Opportunities

I. Play "The Matchless Proverbial Semantics" game. (See: 3.3.4.A)
    A. This game is very long so allow about an hour for it.

II. After playing the game discuss how the winners won and what the others could do to win next time.

III. The game may be played several times until the children are familiar with the sayings.



Media

72 5" x 8" cards for six teams or
80 5" x 8" cards for eight teams (See: 3.3.4.B)

Scratch paper
Pencils

Output

The children will gain an understanding of the meanings of everyday and proverbial sayings.

Evaluation

The child will demonstrate his understanding of sayings by playing "The Matchless Proverbial Semantics" game.

Enrichment

Have the children create sayings for today's world and design a poster for it.

MATCHLESS PROVERBIAL SEMANTICS

OBJECT: For one team to collect more points than any other.

RULES:

1) Each card owned by a team = 10 points
   Each matched pair = 50 points
2) Divide group into six teams (72 cards) or eight teams (80 cards). Give each team a number.
3) Give each team an even number of cards with the sayings and with the interpretations. For six teams each team will receive twelve cards (six with the sayings on them and six with interpretations other than for those saying). For eight teams each team receives ten cards (five of each type). Be sure the sayings cards and interpretation cards are mixed up.
4) The game is divided into playing rounds. Each round will be timed.
5) During the trading rounds you will be given a 15 second warning. Anyone out of his seat at the end of the round loses 10 points for his team.

ROUND 1 (3 minutes)
At your home base, match all the cards you can that you have.

ROUND 2 (3-5 minutes)
When I say "Go" you will go to a specific opposing team and try to trade all the cards you can.

	(8 teams)	(6 teams)
TRADING TEAMS:	1-8	1-6
	2-7	2-5
	3-6	3-4
	4-5	

ROUND 3 (3 minutes)
Each team matches all possible cards. Plan next moves.

ROUND 4 (3-5 minutes)

TRADING TEAMS:	1-7	1-4
	2-6	2-6
	3-5	3-5
	4-8	

ROUND 5 (3 minutes)
Each team matches and verifies its cards. Makes plans.

ROUND 6 (3-5 minutes)

TRADING TEAMS:	1-6	1-5
	2-5	2-4
	3-8	3-6
	4-7	

ROUND 7 (3 minutes)
Each team matches cards - plans

ROUND 8 (3-5 minutes)

TRADING TEAMS	1-5	1-2
	2-8	3-4
	3-7	5-6
	4-6	

ROUND 9 (3 minutes) Each team matches and plans

MATCHLESS PROVERBIAL SEMANTICS (continued)

ROUND 10 (3-5 minutes)

TRADING TEAMS:

(8 teams)	(6 teams)
1-2	1-3
3-4	2-6
5-6	4-5
7-8	

ROUND 11 (3 minutes)

Each team matches and plans.

ROUND 12 (3-5 minutes)

TRADING TEAMS:

1-3	2-3
2-4	4-6
5-8	1-5
6-7	

ROUND 13 (3 minutes)

Each team matches and plans.

ROUND 14 (3-5 minutes)

TRADING TEAMS:

1-4	None
2-8	
5-7	
3-6	

ROUND 15 (3 minutes)

Each team figures up its total number of points secretly.

AUCTION ROUND (No time limit)

Each team reads any extra cards it may have.

Other teams may bid to give away so many of their points in exchange for the cards they need.

The desired cards go to the highest bidder.

The team bidding gives cards to equal the amount bid to the umpire.

The umpire in turn gives these cards to the auctioneering team.

VERIFICATION ROUND (No time limit)

Each team totals up his own number of points.

The team claiming to have the greatest number of points reads its matched sets aloud.

Any other team may challenge their findings.

A correct challenge = 50 points.

Incorrect challenge = 50 points, from the challenging team to the verifying team.

Preparation For The Matchless Proverbial Semantics Game

The teacher playing this game will find there is some preparation involved in making the cards to be matched. However, once the cards are made they can be used over many times.

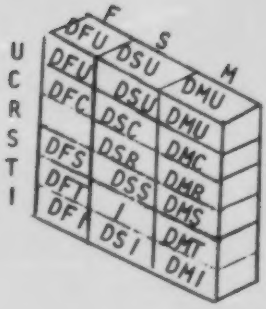
If you are going to play with six teams you will need to make 72 cards--36 cards with the sayings on them and 36 with the interpretations on them. If you play with eight teams prepare 80 cards--40 of each type.

Use 5" x 8" cards and print or type the saying on each card in red (or a color). Use black type or ink for the interpretation on each card.

Each "sayings" card must have an interpretation card to match it. However. all cards should be completely shuffled at the beginning of the game.

Here are some examples of sayings to use. You may also draw from proverbs Franklin's sayings and philosophy. Let the MGM staff know and we'll send you some sayings to use.

SAYING	INTERPRETATION
He who laughs last laughs best.	The person who is made fun of may turn out to be the best person in the end.
What you see is what you get.	You get what you're looking for.
Don't cross your bridges until you get to them.	Don't worry about troubles before you know they exist.
Look before you leap.	Plan out what you're going to do before you do it.
The thread breaks where it is weakest.	Your greatest weakness will show up under pressure.
A tree is known by the fruit it bears.	A person is known by his actions.
Don't cry over spilt milk.	Don't spend the rest of your life regretting what you have done.
Laugh and the world laughs with you, cry and you cry alone.	No one wants to be around a complainer.
Actions speak louder than words.	It's easy to talk about what you're going to do--it's more important to do it.
Beauty is only skin deep.	Character is more important than outward appearance.

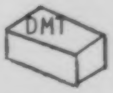


Recommended for Grade 6 only

Concept Divergent Production

Curricular Objective

3.3.5 The child will demonstrate a knowledge of word transformations by creating three puns of their own.



Input

Discuss words that have several different meanings, such as: fly, cat, rap.

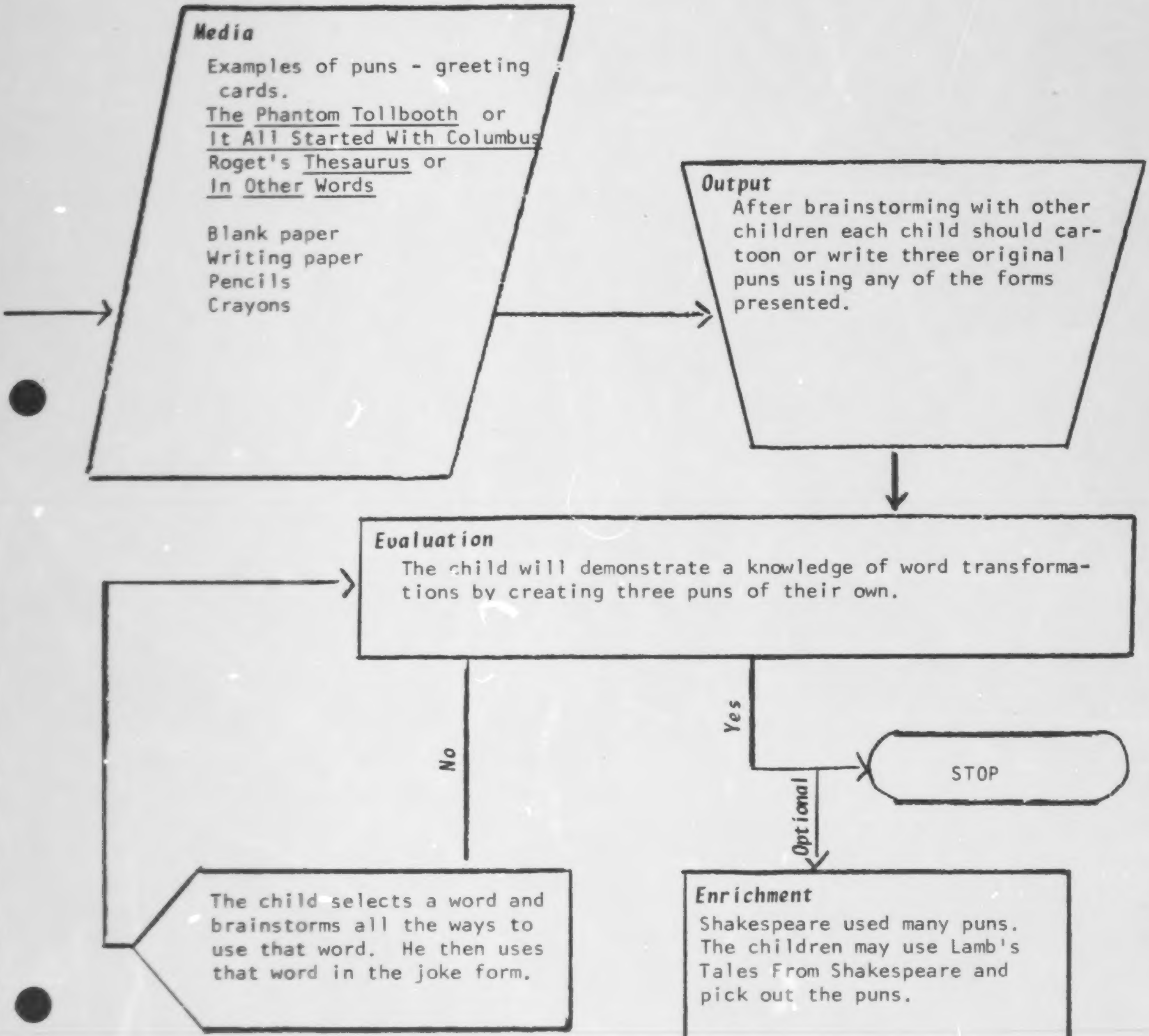
Discuss puns and what they are--how the various interpretations of a word are used to make puns.

Show greeting cards using puns.

Learning Opportunities

I. Discuss four forms of puns with the children.
  A. Jokes--have the children listen to the key words that make them puns (See: 3.3.5.A).
    1: The children may try to answer some of the jokes with puns of their own.
  B. Daffynitions--have the children listen to the pun in each definition and have them guess the word it would fit. (See: 3.3.5.B)
  C. Sayings--have children listen to how poems, titles or proverbs can be used as puns (See: 3.3.5.C)
  D. Stories--read aloud selections from a story written in puns (See 3.3.5.D).

II. Have the children select one of these types of puns and create puns of their own.
  A. They may work together to try them out.
  B. They then may write them or cartoon them and present them orally.



Media

Examples of puns - greeting cards.
The Phantom Tollbooth or
It All Started With Columbus
Roget's Thesaurus or
In Other Words

Blank paper
Writing paper
Pencils
Crayons

Output

After brainstorming with other children each child should cartoon or write three original puns using any of the forms presented.

Evaluation

The child will demonstrate a knowledge of word transformations by creating three puns of their own.

The child selects a word and brainstorms all the ways to use that word. He then uses that word in the joke form.

Enrichment

Shakespeare used many puns. The children may use Lamb's Tales From Shakespeare and pick out the puns.

PUNS AS JOKES

1. Why is that watchdog running around in circles?
   (He's all wound up.)
2. What did one shrub say to another?
   (Boy, I'm bushed.)
3. How does a ghost eat?
   (By goblin)
4. What happens if you sit on a grape?
   (It gives out a little wine.)
5. Why is a keyhole beautiful?
   (Because it's something to adore.)
6. I want to work in a candle factory because they only work on wick ends.

DAFFYNITIONS

1. A chinese harbor - (a junkyard)
2. A fence with nothing to do - (a board fence)
3. A sleeping bull - (a bulldozer)
4. An animal that likes to ride in a car - (carpet)
5. A fancy circus animal - (dandelion)
6. A wrap for your dwelling - (housecoat)
7. A head covering for after dark - (knighthood)
8. A small child's sleep - (kidnap)
9. A small part of dinner - (piecemeal)
10. A sad gong - (bluebell)

SAYINGS

1. The three little pigs did time in the pen.

2. Huck and Finn are friends
Suddenly, Finn dies
But no one worries
Because they know Huck'll bury Finn

*3. "The tune that killed
The cow," said Nat,
"Must have been written
In beef-flat."

*4. He threw her off a cliff,
But it wasn't enough.
"That cliff," she told her mother,
"Was just a bluff."

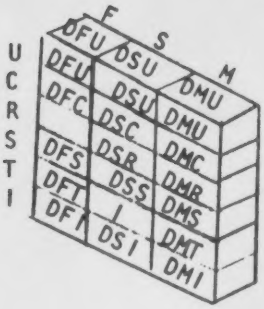
*5. As the sea said
to the leaky ship,
"I can't bear you
Another trip."

6. "A horn upon my saddle,"
Sniffed Paula Revere,
"Is something I have no need for,
Since there's no traffic here."

* From: Pun Fun by Ennis Rees

STORIES

1. Use excerpts from The Phantom Tollbooth by Norton Juster.
2. Read excerpts from It All Started With Columbus by Richard Armour.

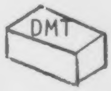


Recommended for Grade 6 only

Concept Divergent Production

Curricular Objective

3.3.6 The child will demonstrate a knowledge of word transformations by creating sayings called "Tom Swifties" of their own.



Input

Discuss homonyms and why they add to the ambiguity of our language.

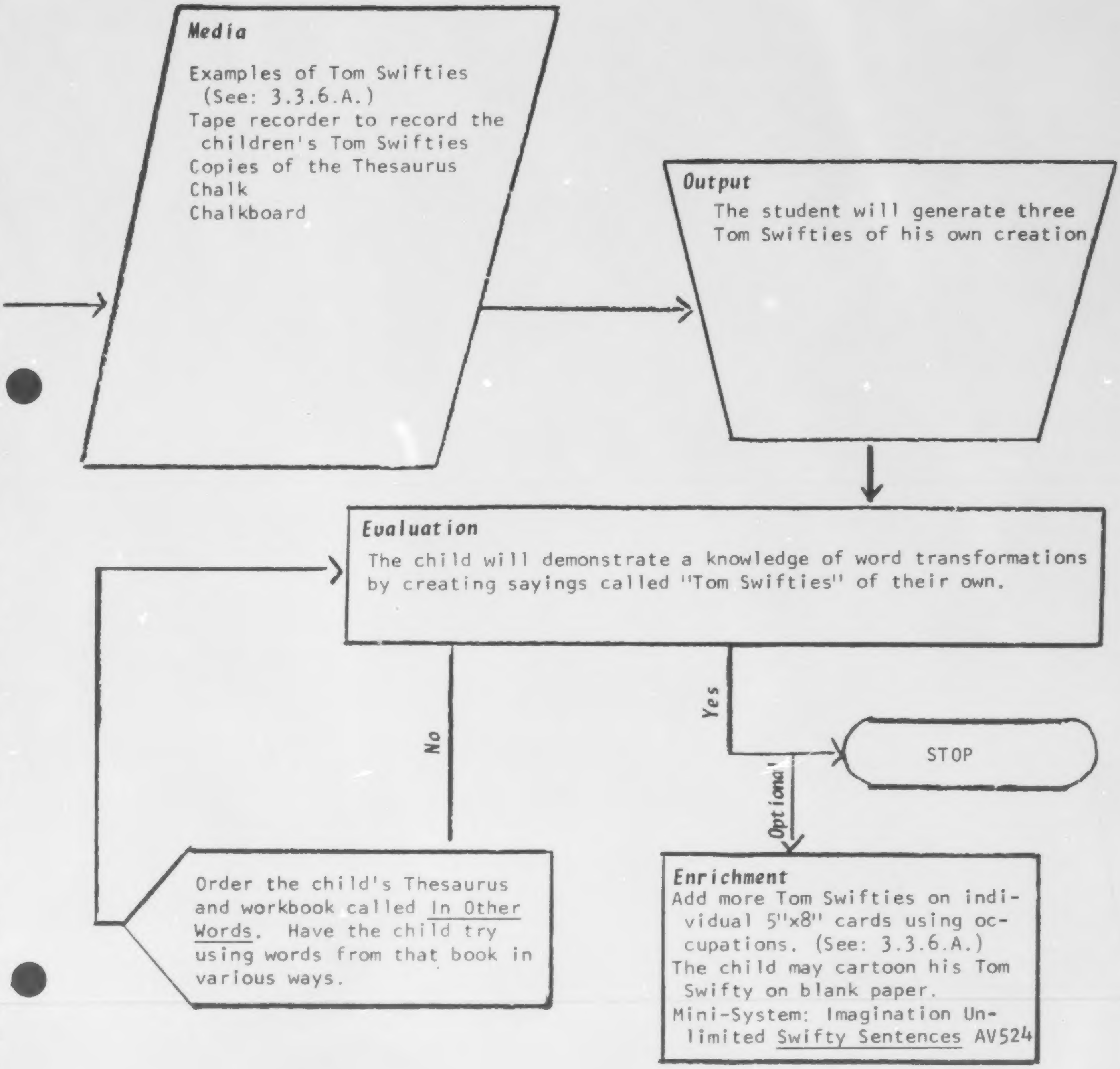
Discuss words that have several meanings, such as: bright, flat, cool.

Review adverbs (and verbs) and how they can be used as modifiers.

Learning Opportunities

I. Explain the Tom Swift books.
    A. These were books about the adventures of Tom Swift and the Motor Boys written in the early 1900's.
    B. In this adventure series Tom and the boys courageously rescued those needing help.
    C. The author phrased his characters' dialogues with strong and courageous modifiers, such as: "I will rescue her," Tom said staunchly. Several years ago this format was used to make puns.

II. Give the children several examples of Tom Swifties (See: 3.3.6.A.)
    A. List some modifiers and see if the children can orally create the action that would use another of the word - without repeating the word itself. (See: 3.3.6.B.)
    B. Read some quotes from Tom and have the children orally make up modifiers that might fit as puns (See: 3.3.6.C.)
    C. A Thesaurus may be used to help generate more words.
    D. When the ideas have been recorded evaluate those which are puns and which are not.



Media

Examples of Tom Swifties (See: 3.3.6.A.)
Tape recorder to record the children's Tom Swifties
Copies of the Thesaurus
Chalk
Chalkboard

Output

The student will generate three Tom Swifties of his own creation

Evaluation

The child will demonstrate a knowledge of word transformations by creating sayings called "Tom Swifties" of their own.

Order the child's Thesaurus and workbook called In Other Words. Have the child try using words from that book in various ways.

Enrichment

Add more Tom Swifties on individual 5"x8" cards using occupations. (See: 3.3.6.A.)
The child may cartoon his Tom Swifty on blank paper.
Mini-System: Imagination Unlimited Swifty Sentences AV524

TOM SWIFTIES

"I'll dig you later," Tom said gravely.

"Let's bet two dollars on the next race," Tom said hoarsely.

"We need a new light bulb," Tom said darkly.

"These hot dogs are good," Tom said frankly.

"I want to be a plumber when I grow up," Tom (piped).

"I hate wilted lettuce," Tom said limply.

"Let's go to the skating rink," Tom said icily.

"Watch out for trucks," Tom said flatly.

"Don't be chicken," Tom said fouly.

OCCUPATIONAL TOM SWIFTIES

"You must have a shot," the doctor said sharply.

"My piano's out of tune," the musician said flatly.

"I love to sleep outdoors," said the hunter intently.

"Let's practice that run again," said the harpist pluckily.

"My daughter has the mumps," said the nurse infectiously.

MODIFIERS FOR TOM SWIFTIES

thinly
cuttingly
pointedly
dryly
fouly
shiftlessly

silently
blindly
craftily
hotly
crisply
crustily

brightly
painfully
piercingly
foggily
pitifully
frostily

CONVERSATIONS FOR TOM SWIFTIES

"Give me that red crayon," said Tom ______________________________.

"My eyes are failing me," Tom said ______________________________.

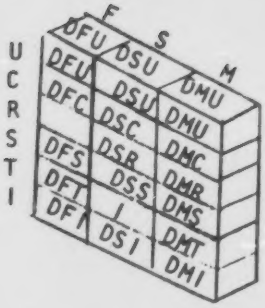
"The door is stuck," Tom said ______________________________.

"I ate everything on my plate," Tom said ______________________________.

"We have two ducks," Tom said ______________________________.

"My feet hurt," Tom said ______________________________.

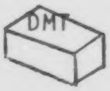
"We just had an earthquake," Tom said ______________________________.



Concept Divergent Production

Curricular Objective

3.3.7 The child will be able to relate two contradictory words in a new way.



Input

Discuss antonyms and what they are.
List orally ten antonyms.

Enrichment Activities:
The Game of Words

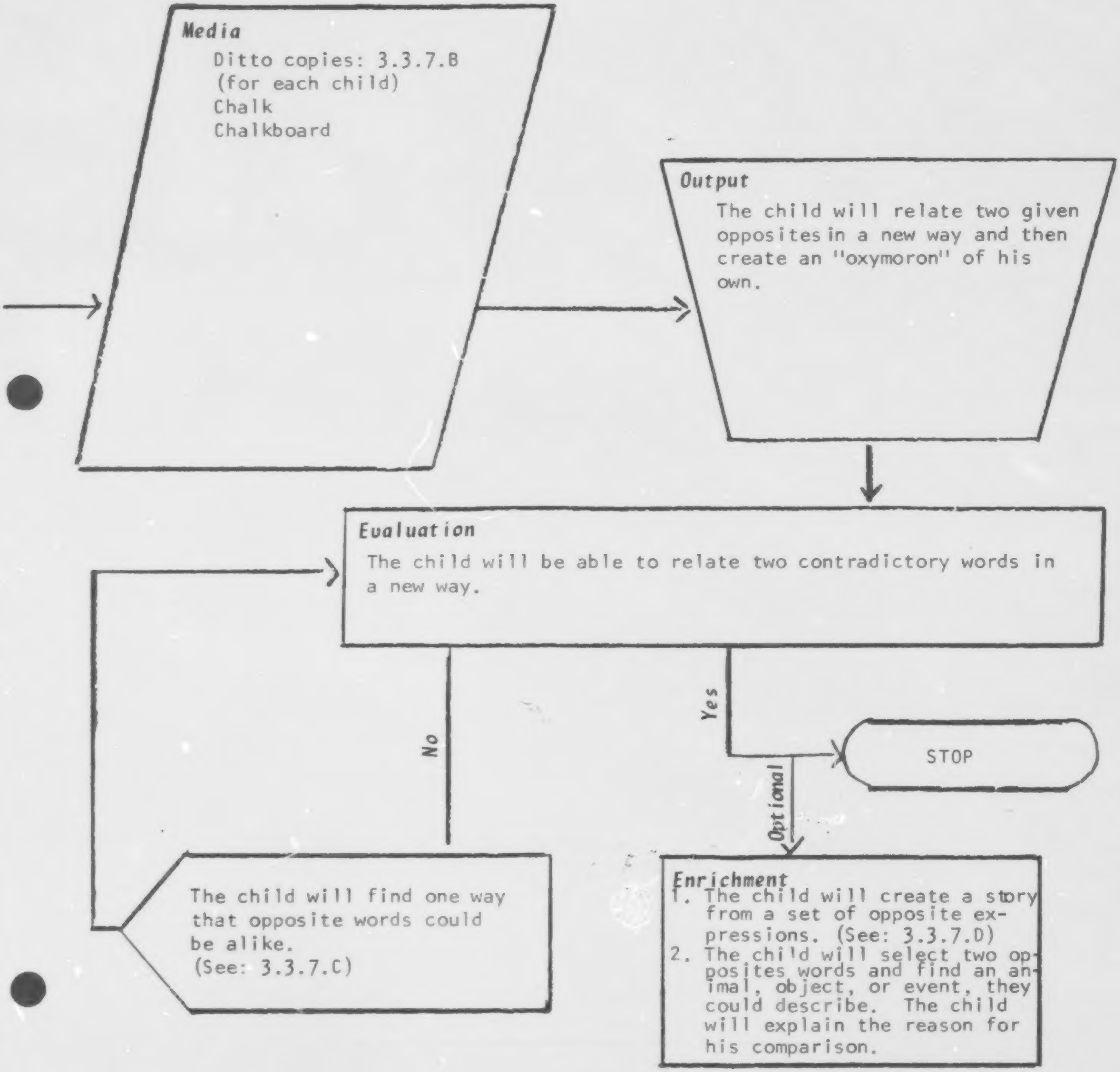
Learning Opportunities

I. Discuss ways in which opposite words could be alike.
   A. Discuss as many ways as possible that "short" and "tall" could be alike.
   B. Discuss two other words that are opposites and find as many ways as possible that they are alike.

II. Discuss some of our expressions that are opposites.
   A. Discuss the use of "pretty ugly."
   B. Discuss the use of "bittersweet."

III. Have the children think of expressions using opposites.
   Discuss the term "oxymorons" - (the use of opposite words to mean a single thing.)
   A. Discuss the words "safe" and "attack" and how they can be used to describe wolf cubs.
      (See: 3.3.7.A)

IV. Have the children try some OXymorons on their own by doing 3.3.7B.



Media

Ditto copies: 3.3.7.B
(for each child)
Chalk
Chalkboard

Output

The child will relate two given opposites in a new way and then create an "oxymoron" of his own.

Evaluation

The child will be able to relate two contradictory words in a new way.

The child will find one way that opposite words could be alike.
(See: 3.3.7.C)

Enrichment

1. The child will create a story from a set of opposite expressions. (See: 3.3.7.D)
2. The child will select two opposites words and find an animal, object, or event, they could describe. The child will explain the reason for his comparison.

THE WEAK-AS-A-HORSE EXERCISE

This is your introduction to Compressed Conflicts -
a new way to Make Things Strange.

A compressed Conflict is a two-word phrase
that sums up two opposing things about an object or idea.
For example, a Compressed Conflict
that describes playful wolf cubs
might be SAFE ATTACK.
On the one hand, their play is SAFE
because they are pretending anger
by growling and bearing their fangs.
On the other hand, their play is a constant ATTACK
of one wolf cub against the others.
In fact, their attacks are good practice
for the time when they are grown up.
SAFE ATTACK sums up two different and opposing things
about wolf cubs at play.

One special thing about Compressed Conflicts
is that they might describe more than one thing.
It depends on your imagination.

OXYMORONS - contradictory words used together

PEACEFUL TERROR describes this animal ____________

Why? ______________________________

____

EXPLOSIVE GENTLENESS is what thing? ____________

Explain: ______________________________

____

What is an example of a CAREFUL COLLISION? ________

Why? ______________________________

____

My own Oxymoron is ____________________

It means: ______________________________

3.3.7.B

From Making It Strange, Harper & Row Publishers, 1968.

OPPOSITES ATTRACT

diminutive giant..

....

....

....

cool flame..

....

....

....

right mistake...

....

....

....

triumphant loser..

....

....

....

illiterate reader...

....

....

....

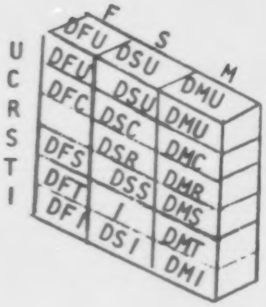
innocent criminal...

....

....

....

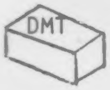
Look again at the several expressions and your explanations for them. Do you see the elements of a good yarn in any of them? At least one of the expressions should suggest a story which might contain humor, suspense, or action in it. Why don't you think about one of the contradictions and write your ideas about a story which could come from it? You can sketch your ideas in the space below. When you have formulated your plan for a story in some detail, go ahead and write your story! Remember -- you can employ humor, suspense, or action!



Concept Divergent Production

Curricular Objective

3.3.8 The student will show an understanding of the ways in which words can be changed and disguised to create new messages.



Input

Discuss how messages have been changed to hide what's in them.

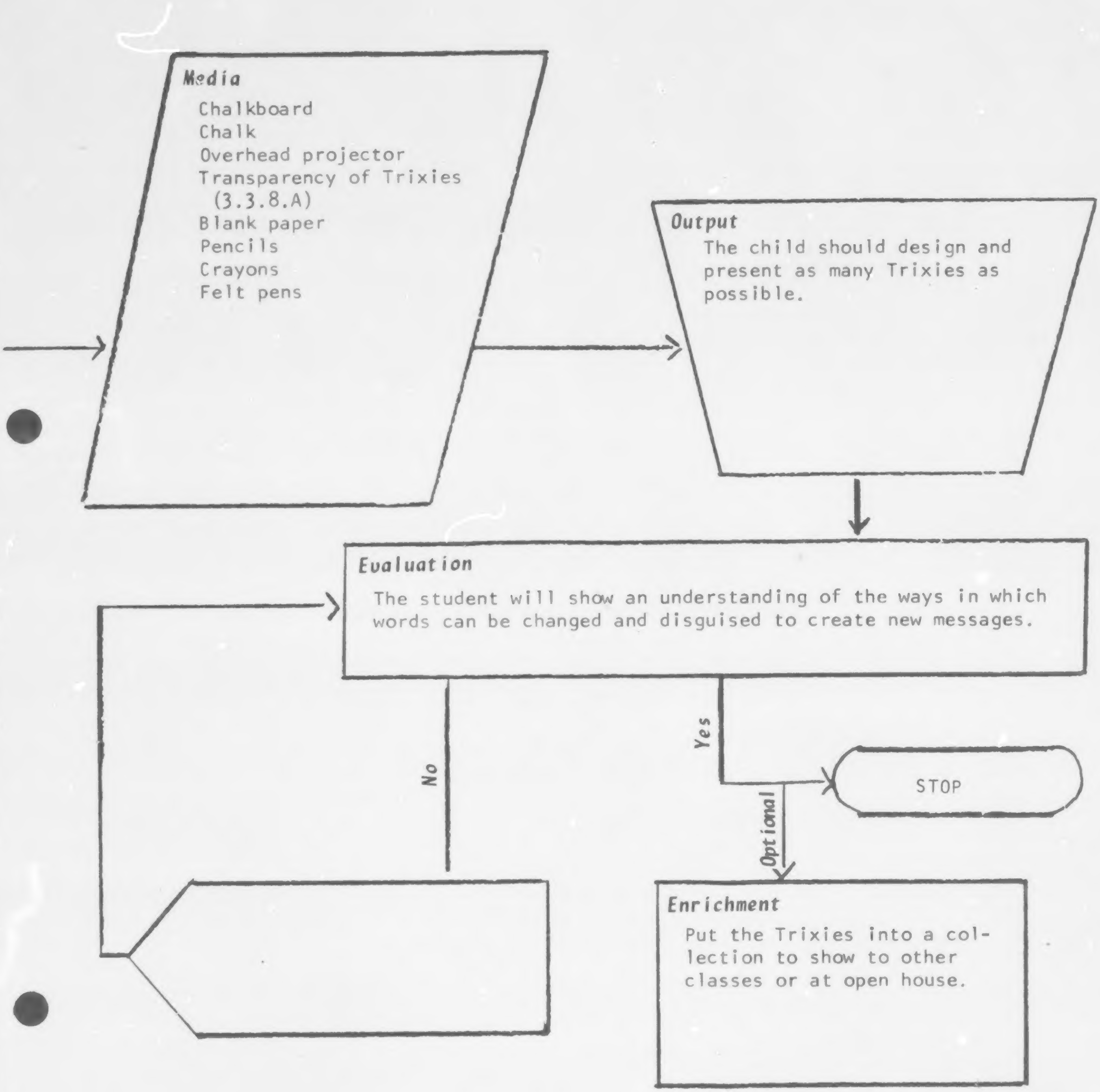
Discuss a system called cryptography (See Lesson 4.3) for hiding messages.

Learning Opportunities

I. Ask the children to name words telling directions (prepositions).
   A. List them on the board and see if any child could think of a word containing one of them (such as understood, afterthought, beforehand, overlook).
      1. Put that word on the board and see if any child can find a way to "disguise" the word.

II. Show the children samples of "Trixies" -- words disguised this way. (See: 3.3.8.A.)
   A. Let the children translate the messages and see how they are made.

III. Have the children design Trixies of their own using pictures, words, letters, or all three.
   A. They may use sentences, famous sayings, book titles, or other choices for their translations.



Media

Chalkboard
Chalk
Overhead projector
Transparency of Trixies (3.3.8.A)
Blank paper
Pencils
Crayons
Felt pens

Output

The child should design and present as many Trixies as possible.

Evaluation

The student will show an understanding of the ways in which words can be changed and disguised to create new messages.

Enrichment

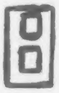
Put the Trixies into a collection to show to other classes or at open house.

TRIXIES

Trixies are disguised words. If you find the word "I" directly under the word "Stand" you will know that this represents "I understand." If you see the word "shall" in small letters enclosed in the word "Deed", you can correctly conclude that this combination is "Shall in deed." To start you off, the answer to No. 1 is: "To overthrow the U.N. would incur a dark period in history."

1. $\overset{2}{\text{Throw}}$ the UN IN wood CUR HIS●TORY

2. estimate
Don't whose ( )

3. The ,  and the TEN
8 slept

4. EX 2B AMS
confident does SU not RE 6S

5. Hill
John
Mass

6. VEST a fine MENT when UR* O

7. Stand
I TE u ND $\overset{2}{\text{Throw}}$ Taking
my

8. She herself DIG with NATION

From The Provocative Puzzler, Jerome S. Meyer. Scholastic Book Services, 1965.

TRIXIE ANSWERS

1. To overthrow the U.N. would incur a dark period in history.

2. Don't underestimate whose parent this is (parenthesis)

3. The commodore overate and the captain overslept.

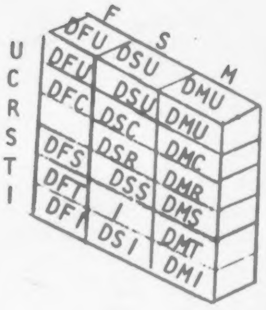
4. To be overconfident between exams does not insure success.

5. An address: John Underhill
   Andover, Massachusetts

6. A fine investment begins when you are asked to risk (asterisk) nothing.

7. I understand you intend to overthrow my undertaking.

8. She is beside herself with indignation.



Concept Divergent Production

Curricular Objective

3.3.9 The child will combine two unlike objects to create a new object based on botany.

Input

Discuss the science of botony and the identification of plants.

Discuss the use of Latin names in the identification of plants.

Look up "Botany" in the World Book Encyclopedia to find out why Latin words are used by botanists.

Learning Opportunities

I. Put several Latin names for plants on the board so the children can see the forms of the words. (See: 3.3.9.A.)
  A. Distribute ditto sheets of 3.3.9.B. and let the children try to guess what the Latin names stand for.
  B. Go over the ditto sheet orally and then let them try to give names to the three kinds of "plants" listed at the bottom.

II. Discuss how people who are original can combine unlike things into new ideas.
  A. Discuss how it might be possible to combine a plant with an object to make an imaginary plant.
  B. Show Edward Lear's drawings of imaginary plants (See: 3.3.9.C.)
  C. Analyze the names given for each plant.

III. Have the child create and name at least three new plants of his own.

OTHER PLANTS TO TRY

1. Lathyras Odorata - sweet pea
2. Persea Americana - pear (alligator or avocado)
3. Campanula Rotundiflora - bluebell
4. Olea Europa - olive
5. Petroselinum Crispum - parsley
6. Pseudotsuya Taxifolia - Douglas fir
7. Cucumis Sativeis - cucumber
   Cucumis Melo - cantaloupe
8. Citrus Nobilis - tangerine
   Citrus Sinensis - orange
9. Prunus group - (stone fruit)
   Prunus Avium - cherry
   Prunus Domestica - prune
   Prunus Persia - peach

3.3.9.B.

BAFFLED BOTANY

What in the world are those words below? They are the Latin names for some of our familiar plants. Are you perceptive enough to see a clue in each one to help you in indentifying the plant? Try it!

1. Citrus Limonis
2. Daucus Carota
3. Ficus Cariaca (you have to peel the skin off)
4. Cocos Nucifers (contains "meat" and "milk")
5. Spinacus Oleraces (kids love it)
6. Pistacia Vera (comes in green ice cream)
7. Zea Mays (a basic food for many)
8. Rubus Loganobaccus (a familiar berry)
9. Piper Nigrum (adds spice to our lives)
10. Citrullus Vulgaris (big and watery - great for hot days)

Here are the answers for the plants above. See if you can find them...... by unscrambling them.

repepp
melon
tromenawle

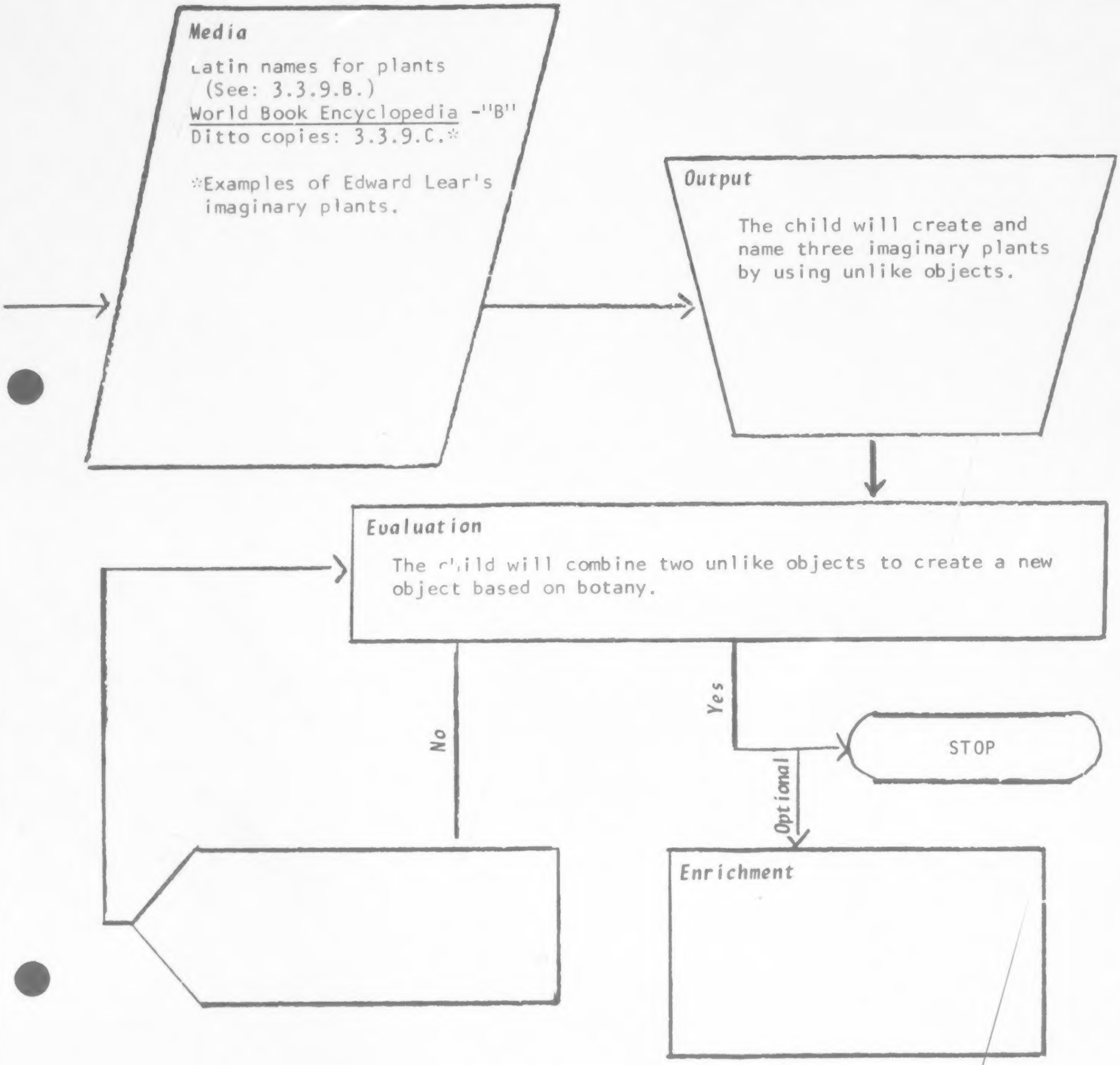
bryrensobey
norc
pasnich
gif

noacucot
itaspochi
crator

Now: What names would you give to:

1. A tree that grows pencils
2. A bush that grows candles
3. A plant that blooms with licorice gumdrops

From Nonsense Books, Edward Lear. Little Brown & Company, 1888.



Media

Latin names for plants
(See: 3.3.9.B.)
World Book Encyclopedia -"B"
Ditto copies: 3.3.9.C.*

*Examples of Edward Lear's imaginary plants.

Output

The child will create and name three imaginary plants by using unlike objects.

Evaluation

The child will combine two unlike objects to create a new object based on botany.

Enrichment

“Our civilization is within reach of one f the greatest steps in evolution: knowldge of the possible existence, nature and ctivities of independent civilizations n space,” the National Academy of Scinces reported June 1. “At this instant, through this very document, are perhaps passing radio waves bearing the conversations of distant creatures—conversathat we could record if we but pointed a radio telescope in the right direction . . .”

Here, noted industrial designer Henry Dreyfuss, author of the “Symbol Sourcebook” recently published by McGraw-Hill, suggests that symbols may be the means by which man eventually will communicate with these “distant creatures.” Dreyfuss also drew the illustrations.

The Symbol Lingo: a Way to Unity

HENRY DREYFUSS

One day, I expect, some future inhabitants of this planet will weekend on the moon or Jupiter. Some enterprising entrepeneur will develop exciting sports to play in moondust, and skiing down Mount Hadley will be a stimulating event.

In off hours, sportsmen will glance at Mother Earth whirling around in her pollution and wonder what's going on down there. For one thing, they'll wonder what a billion-plus souls, clustered on what looks like too small a sphere to contain them, are disagreeing about *today?*

This observance of our tiny sphere from so great a distance will lend some perspective and show us the futility of man bickering with man, and nations fighting with nations. And it could convince us that it is often lack of communication that prevents understanding and peaceful coexistence.

It is conceivable that in the future we will all be speaking a single language—but that is a long time off, for cultures treasure their mother tongues and have rejected various attempts such as Esperanto, Interlingua, Ido, Volapuk—all of which combine elements of existing languages—as well as Ro and Suma, both created artificially.

Until that day when a "single-lingo" arrives, graphic symbols will play an important part in giving information, directions warnings that can be clearly understood anywhere on the globe—and indeed in outer space, if there are any souls to greet us there!

Los Angeles Times
Opinion
Interpretation
Editorials
Background
SECTION G
SUNDAY, JUNE 18, 1972

At this very moment, as our space vehicle Pioneer 10 speeds toward its exploration of the planet Jupiter, it carries a gold-plated aluminum plate on which is engraved a message. The message is depicted in a series of symbols, and any scientist, no matter in what strange shape he may be, or where or when he was born, should be able to decipher it.

In symbols, the message gives some scientific data—the position of earth and of the Milky Way, a silhouette of Pioneer 10, and the figures of a male and female inhabitant of our planet. It is doubtful if anyone will be around to read it, but it is certainly worth a try—and it definitely suggests symbols as an interplanetary means of communication.

If a system of symbols could be compiled that would be equally recognizable in Lagos or Lapland, perhaps the dream of a universal basic means of communication could be realized. I believe this is possible, but I am not suggesting a "wordless world."

In no way do I propose that this be yet another language for it is not a language at all—it is a supplement, a support, an adjunct to *all* languages to help make for better and faster understanding in specific areas. Remember that certain symbols have already evolved to the point of universal acceptance in such areas as music, mathematics and many branches of science.

At the banquet given by Chou En-lai in Peking for President Nixon, it was fascinating to hear the Peoples Liberation Army Band play "Turkey in the Straw," "America the Beautiful" and "Home on the Range." It is improbable that members of that band read English but they obviously read musical notes—a fine example of the symbols of music carrying an identical message to any spot on earth and in any language.

The way, therefore, has already been paved in several fields—and

Please Turn to Page 6, Col. 1

1

THE SYMBOL LINGO

Continued from First Page

while we cannot hope to create a complete and universal symbol system by next Friday, we can see already how the usefulness of symbols can be infused into many important new areas.

Safety is a primary factor in the use of symbols. A simple, quickly comprehended shape or color, or combination of both, is translated to the brain far faster and more directly than a written word or words. A single symbol can abbreviate an entire idea; consider it as shorthand to the brain.

We are most aware of the traffic signs and symbols that line our roads. In the last 10 years 457,000 Americans have been killed and 17 million crippled in automobile catastrophes. Many traffic signs are ambiguous; many are long, written directives that take so long to read that we have bumped into the car in front of us while our eyes were on the sign, rather than on the road.

A symbol can abbreviate the thought into a simple form that is instantly communicated. Recently, the Federal Highway Administration of the U.S. Department of Transportation announced a commendable effort to place the traffic symbols, so successful on European roads, all over the United States.

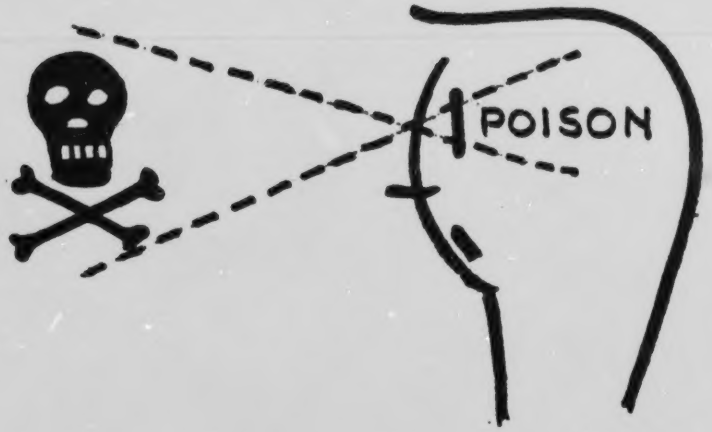
In this shrinking world, where aviation and video communication puts us in everyone's back yard, symbols aid in crossing all language barriers. Superjets girdling the globe know no language borders; when in flight, and smoking is prohibited, the demand must often be stated in half a dozen languages. One symbol would convey the idea —and also, it has been observed, passengers get the signal faster and obey it immediately.

The confusion and concern of arrival in a foreign country is relieved by directional symbols in the airport; and we now find them in hotels and on street signs, in shops, theaters, government agencies, even in hospitals. We are convinced that travelers in foreign lands are happier, more relaxed, even more amicable, if symbols have made them comprehend what is expected of them and what is going on around them.

International business profits enormously when symbols are employed. Suddenly a product, heretofore limited by directions and instrument identification in a single language, can now be shipped around the world and via symbols, be understood everywhere.

Imagine a West German dealer, under the pressure of a harvest, urgently ordering 500 tractors and finding the nearest ones in Paris—with French instructions! Imagine further that in Germany, once the tractors were converted, they might have to be operated by an occasional Swedish or Hungarian worker!

At airports, at wharves, at railroad stations, directions for freight and mail must be read in many tongues. A carton shipped from Moscow could be transported via Istanbul, Piraeus, Genoa and Lisbon before it reached its destination in the United States. Yet, the handlers in each of these ports could be symbolically directed to keep the carton dry, to be careful of its fragile contents, to keep it cool, which side should remain up—and a dozen other requests.



The sciences use symbols; physics, astronomy, geology, medicine all employ graphic devices, and a Polish scientist can understand a thesis in his field, written in Portuguese—because he is led through it by a chain of international symbols.

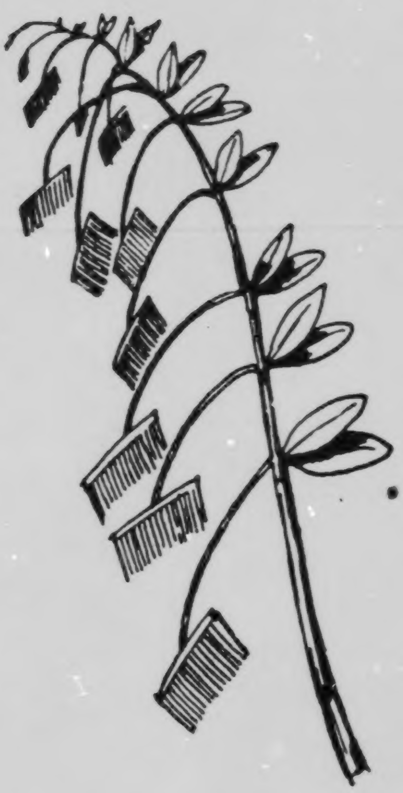
Choreographers can notate the steps of a complicated ballet and transfer them to a troupe on the other side of the globe.

On the lighter side, there is, in fact, almost no field of human endeavor —from the intercontinental to the picayune—in which symbols do not play a part.

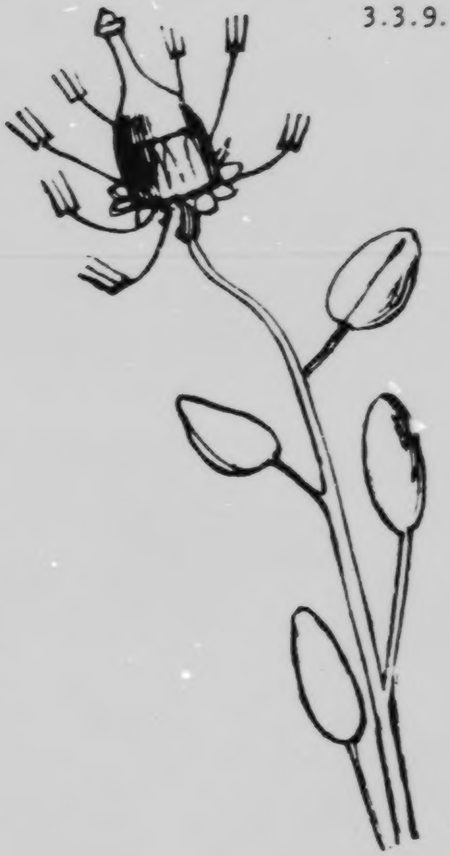
Did you know, for instance, that those little squiggles on the top of chocolate candies are symbols denoting what's inside? The code is not difficult to break — although I should point out that different candymakers often use their own symbology, and so I always seem to wind up with a raspberry cream.

Far better standardized is the symbol language employed by American hobos. Random markings on barn doors and country fences carry a clear message for any truly professional knight of the road.

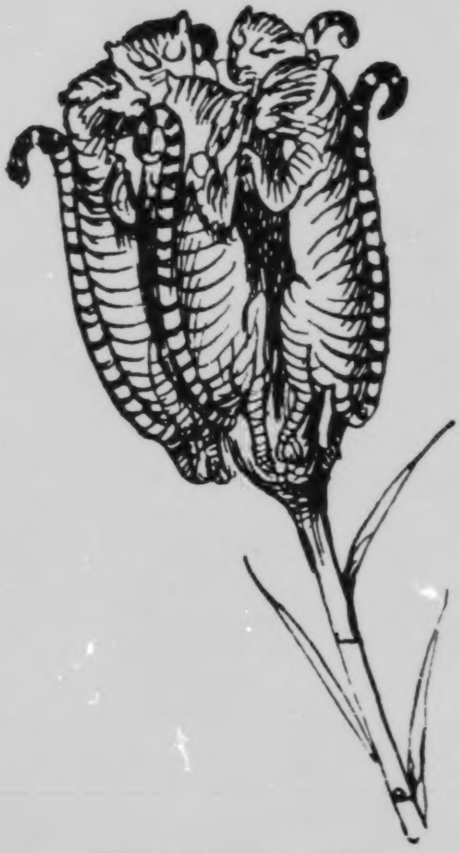
Man has come full circle in his communicative needs. From early cave man's rudimentary symbolic drawings to perhaps overly sophisticated verbal and written communication, and now to help untangle the mess of misunderstanding, we resort to graphic symbols again, in our search for communicative tools that can cut across the tangle of complexity to which the world's many languages have delivered us.



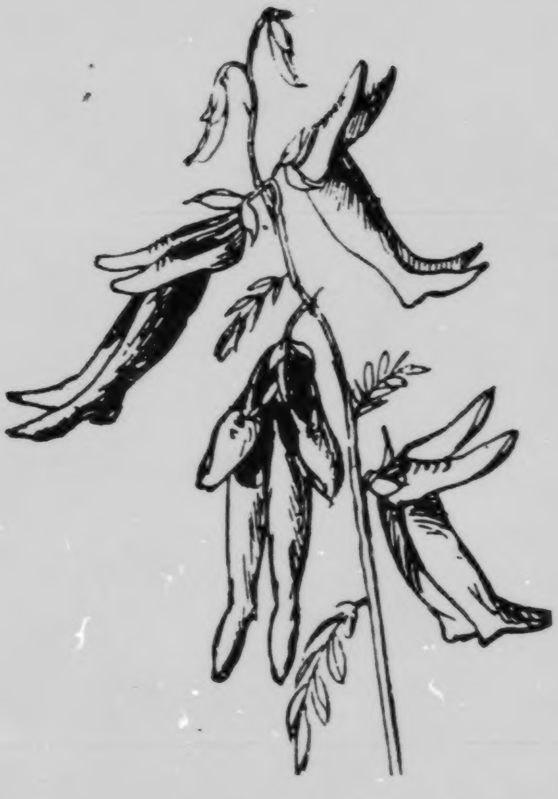
Smalltoothcombia Domestica.



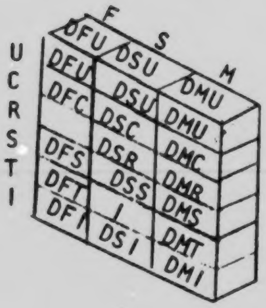
Bottlephorkia Spoonifolia.



Tigerlillia Terribilis.



Shoebootia Utilis.



Recommended for Grade 6 only

Concept Divergent Production

Curricular Objective

3.3.10 The student will demonstrate his understanding of symbols by creating ten meaningful symbols of his own.

Input

Discuss the use of symbols by prehistoric man. Discuss how we have come full circle in returning to symbols today.

Discuss the purposes of using symbols. (See: 3.3.10.A.)

Discuss the problems of using language in other parts of the world. (See: 3.3.10.B.)

Learning Opportunities

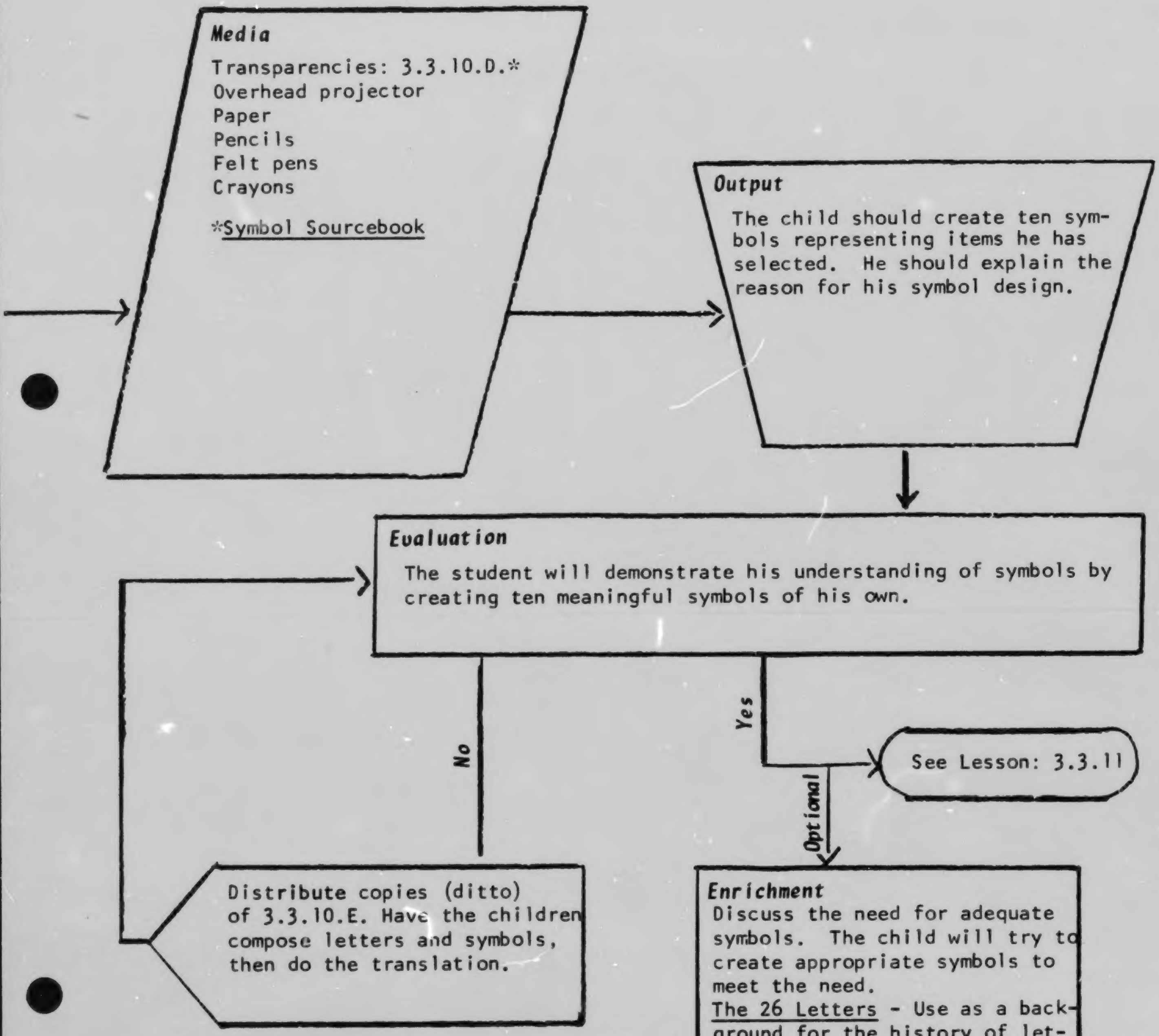
I. Brainstorm a list of our most familiar symbols.

II. Discuss how some of the symbols came about. (See: 3.3.10.C.)
  A. Discuss what clues are used to "translate" the symbol.

III. Show some examples of symbols and the areas they are used in today. (See: 3.3.10.D.)

IV. Have each child brainstorm a list of symbols needed in various areas, such as:
Utilities Traffic
Buildings Sports
Services

V. The child will use his list to select ten items for which he will create symbols.
  A. Have the child consider the attributes of each item.
  B. Have the child devise pictures to stand for the attributes.
  C. Then the child should combine these attribute pictures to create the symbol.



Media

Transparencies: 3.3.10.D.*
Overhead projector
Paper
Pencils
Felt pens
Crayons

*Symbol Sourcebook

Output

The child should create ten symbols representing items he has selected. He should explain the reason for his symbol design.

Evaluation

The student will demonstrate his understanding of symbols by creating ten meaningful symbols of his own.

See Lesson: 3.3.11

Distribute copies (ditto) of 3.3.10.E. Have the children compose letters and symbols, then do the translation.

Enrichment

Discuss the need for adequate symbols. The child will try to create appropriate symbols to meet the need.
The 26 Letters - Use as a background for the history of letters.

Mini-System: Thinking Differently
Writing Your Own Language - AV#515.

SPLAIN BINGLISH

British Hobby ---Snicker Only if Seemingly

BY TOM LAMBERT
Times Staff Writer

LONDON—The English-language sign on the door of the cathedral in Siena, Italy, advises tourists:

"Women inside men's coats will not be admitted."

A hotel in Vincenza, Italy, asks prospective British guests to sign reservation forms agreeing to accommodations "with or without bathrooms, and I bind myself to pay even though I will not use it."

And the English-language brochure of the Hotel am Gaisberg, Salzburg, Austria, promises "you will feel like being at home . . ."

These are examples of what Britons call "Splain Binglish," the frequently amusing, sometimes hilarious, efforts of foreign tourist trade entrepreneurs, public and private, to smooth the way for guests with pounds sterling or U.S. dollars to spend.

In Times of London

These gems, and countless more, are not to be found in any offbeat tourist guide. They are found regularly, and surprisingly, in the pages of The Times of London, one of the sedate dowagers of the newspaper world.

The London Times in general is grayly garbed in precise King's English and given to anachronistically imperial editorials such as the recent one entitled: "Norway Should Be Looked After."

But the staid grande dame has a sly pinch of snuff tucked in her cheek for all that.

It is called "The Times Diary," a section devoted to a melange of oddments about people and events the world over: President Nixon watched all or parts of six televised football games over the recent holidays; "American wildlife folk are all a-twitter" because 13 whooping cranes are missing; Peking's famed old International Club has been closed; Bernadotte, the French revolutionary general who was named king of Sweden by Napoleon had "Mort aux Rois" (*Death to Kings*) tattooed on his chest.

This Is Bumper Year

But this is the year of Splain Binglish, and the Diary's semianonymous compiler, PHS, says he is snowed under with items. PHS notes there are classic themes such as menus. Recent items included "Hen fried with butler" (Poitiers); "Prawns in spit" (Milan); "Utmost of chicken with smashed pot" (Greece); "Boiled chicken with horns" and "Nervous meatballs" (Bulgaria).

At the Leningrad airport: "Aeroflot Soviet Airlines has more than 100,000 miles of international airlines, disposing of the latest aircraft and equipment and experienced pilots and personnel."

The Niesen-Kulm Hotel atop a Swiss precipice took cognizance of the varying Alpine skills of its guests with this: "Don't leave the path to pick flowers; you risk a deadly fall or glide."

Render Eleanor Parker reported returning to her parked car in St. Tropez, France, to find this note on the windshield: "Your car is wrongly parked. In a few moments it will be taken to the police station and bound up."

A Copenhagen hotel warned: "In case of fire, open the window and call for help in a seemly manner."

A Japanese railroad station put up the sign: "All the tickets for the train to Tokyo are soiled."

But Splain Binglish is not a foreigner to Britain, either, the Diary reports.

Rough Wine

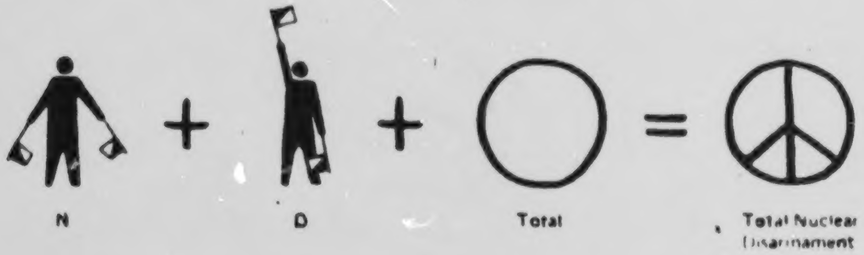
The wine list in a Chinese restaurant in Petersfield offered "vine rough Bordeaux," and a London restaurant listed "fried lover and mushed potatoes."

PEACE

Controversy surrounds the origin of the ubiquitous peace symbol. It was introduced by pacifist Lord Bertrand Russell during Easter of 1958, when he marched at Aldermaston, England, campaigning for nuclear disarmament.

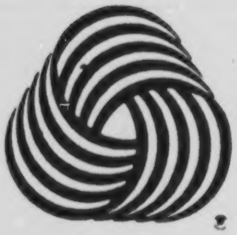
The most acceptable explanation of the design relates it to the international semaphore alphabet: N (for nuclear), D (for disarmament). These superimposed signals are surrounded by a circle indicating complete, world wide, or total. Thus, total nuclear disarmament.

So today, this distinctive mark is universally a symbol for peace.



FROM TRADEMARK INTO SYMBOL

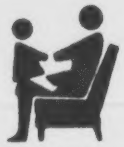
It is a rare occurrence when a trademark sheds its strictly commercial usage as a logo and emerges as a widely used symbol. But this is exactly what happened to the Woolmark symbol identifying "Pure New Wool."

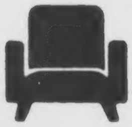


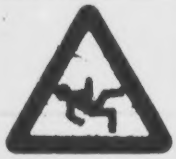
Reminiscent of a sleek skein of yarn, this unique design is easily remembered. And it has been so expertly publicized and protected that it has become internationally accepted as a symbol for fine wool products.

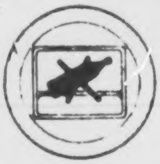
(Woolmark registered by International Wool Secretariat and usable only by their licensees. Reproduced here by special permission.)

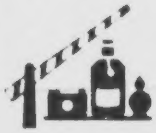
ACCOMMODATIONS AND TRAVEL

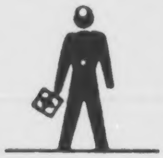

COMPARTMENT Mothers and Children

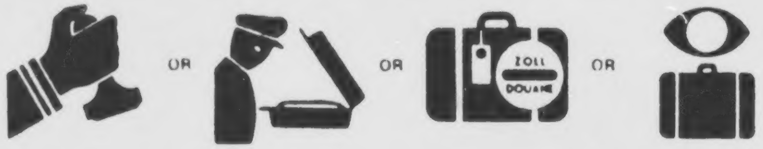

CLUB

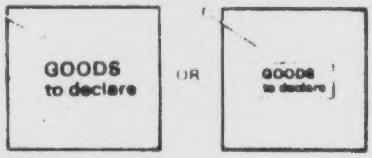

DON'T OPEN BEFORE VEHICLE STOPS

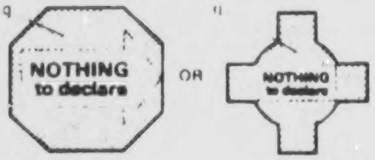

DO NOT LITTER

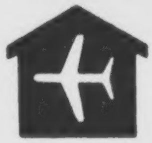

DUTY FREE SHOP

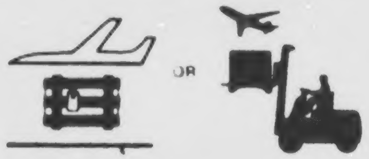

PUBLIC HEALTH


OR
OR
ZOLL
DOUANE
OR
CUSTOMS


GOODS
to declare
OR
GOODS
to declare
GOODS to DECLARE

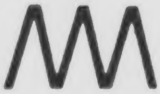

NOTHING
to declare
OR
NOTHING
to declare
NOTHING to DECLARE

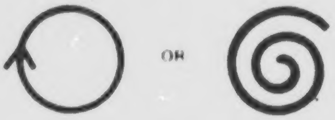

HANGARS



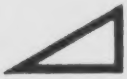
AIR FREIGHT

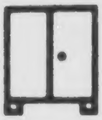
CLOTHING SYMBOLS

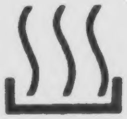

AGITATE

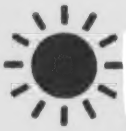


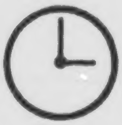
SPIN DRYING

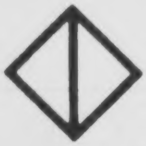

INCREASING ACTION

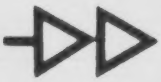

CUPBOARD DRY

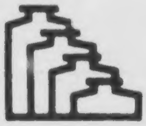

DRYING

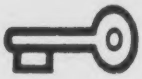

DRY, HEAT

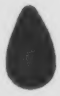

TIME

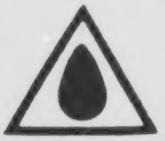

START

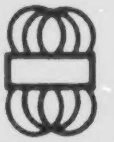

FAST FORWARD

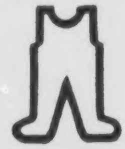

WEIGHT

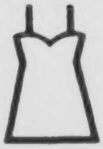

OPEN DOOR or LID

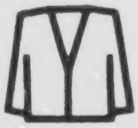

DRIP PROOF

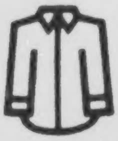

SPLASH PROOF

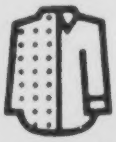

WOOLENS

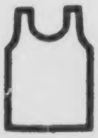

BABY CLOTHES


DAINTY CLOTHES

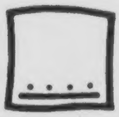

OUTER GARMENTS

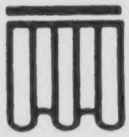

SYNTHETICS


SYNTHETIC/COTTON MIXTURE


TRICOT (Knitted)

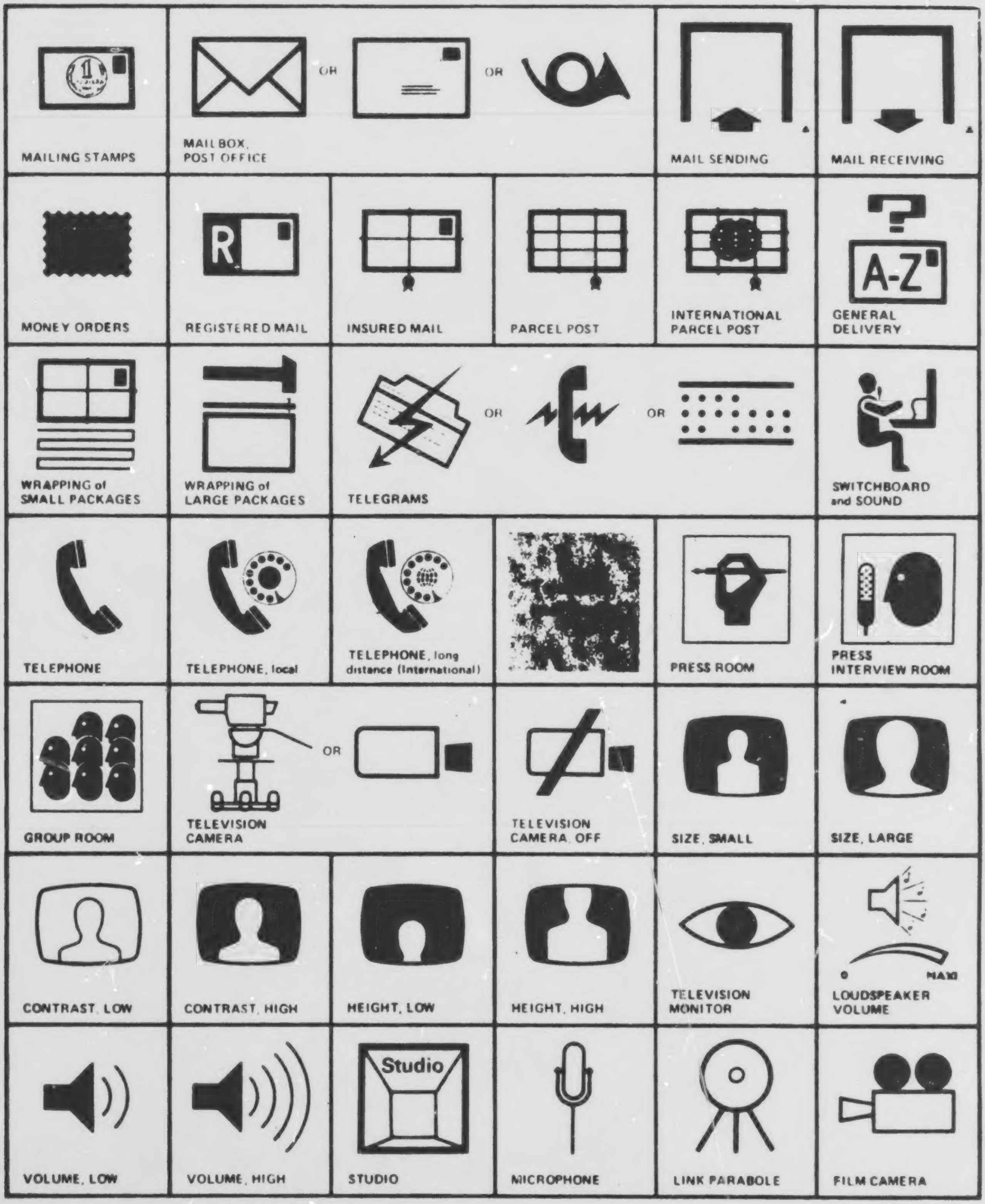
TURKISH TOWELING


BED and TABLE LINEN


CURTAINS

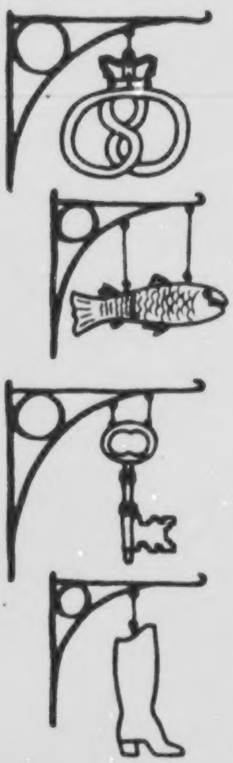
From Symbol Sourcebook, Henry Dreyfus. McGraw-Hill, New York, 1972.

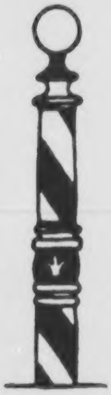
COMMUNICATIONS

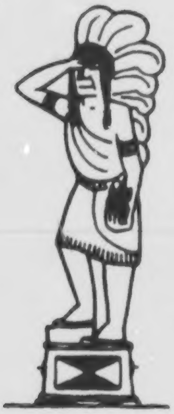

MAILING STAMPS
OR
OR
MAILBOX, POST OFFICE
MAIL SENDING
MAIL RECEIVING
MONEY ORDERS
R
REGISTERED MAIL
INSURED MAIL
PARCEL POST
INTERNATIONAL PARCEL POST
?
A-Z
GENERAL DELIVERY
WRAPPING of SMALL PACKAGES
WRAPPING of LARGE PACKAGES
OR
OR
TELEGRAMS
SWITCHBOARD and SOUND
TELEPHONE
TELEPHONE, local
TELEPHONE, long distance (International)
PRESS ROOM
PRESS INTERVIEW ROOM
GROUP ROOM
OR
TELEVISION CAMERA
TELEVISION CAMERA, OFF
SIZE, SMALL
SIZE, LARGE
CONTRAST, LOW
CONTRAST, HIGH
HEIGHT, LOW
HEIGHT, HIGH
TELEVISION MONITOR
0
MAXI
LOUDSPEAKER VOLUME
VOLUME, LOW
VOLUME, HIGH
Studio
STUDIO
MICROPHONE
LINK PARABOLE
FILM CAMERA

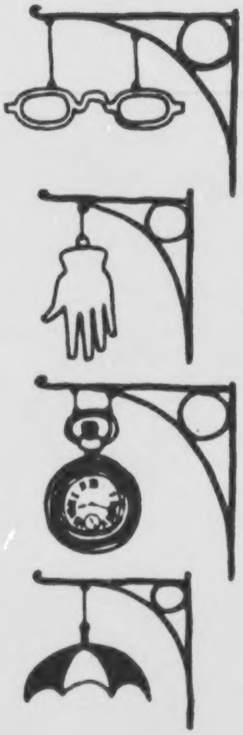
▲ A symbol for one of the various types of mail can be combined with the "Sending Mail" or "Receiving Mail" symbols. **Example** indicates Sending Parcel Post

From Symbol Sourcebook by Henry Dreyfus. McGraw-Hill, New York, 1972.









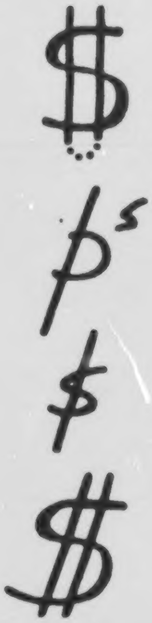
PRE-NEON

For centuries, shopkeepers and professionals the world over have displayed three-dimensional symbols on the outside of their premises.

Besides reminding regular customers of the services and merchandise offered, these indicators also informed tourists not familiar with the language, as well as local illiterates (who abounded before the last century), of what was available within.

These handcrafted symbolic sculptures are today much sought-after collectors' items. How far removed is today's excess of signs that visually pollute our streets and avenues.

EASY COME



We all know where our dollars come from, although we are seldom quite sure where they go. But few of us can say where the dollar symbol itself came from.

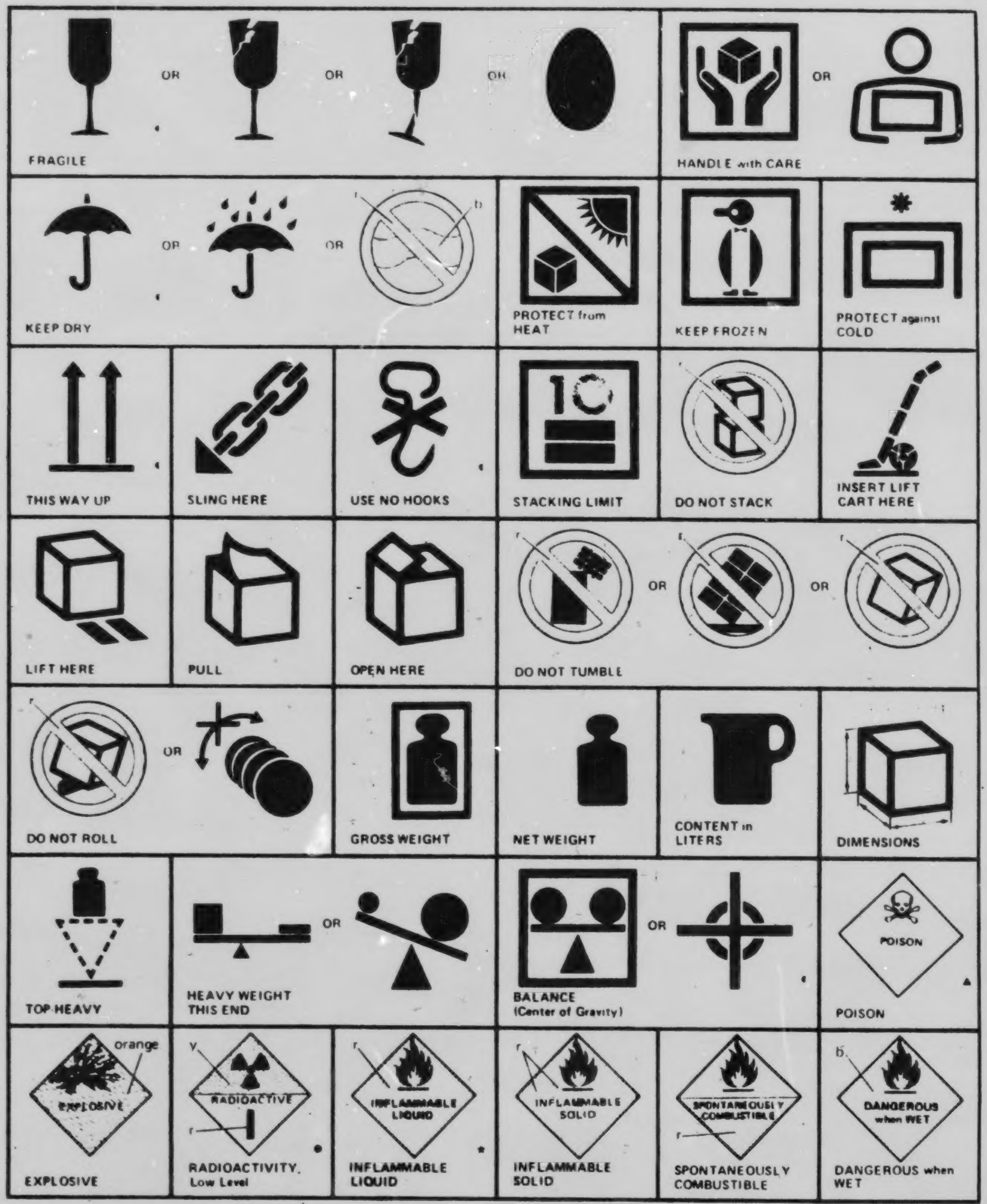
Zealous patriots erroneously speculate that it was derived by superimposing the first letter of United over the first letter of States, and that through usage over the years the bottom of the U was dropped off.

Historically, the Spaniards in the 16th century brought their peso to the New World. They had abbreviated the peso to a "P" and pluralized it by placing an S above and to its right, eventually the P was simplified to a single long stroke, and the S placed astride it. Those fancifully inclined can imagine a decorative monogram of an S for Spanish, intertwined with a P for peso.

In the 1700s, young America patterned its dollar after the peso and adopted the peso mark – but this mark somehow, and with no explanation whatsoever, now appears with a second oblique line added to its configuration.

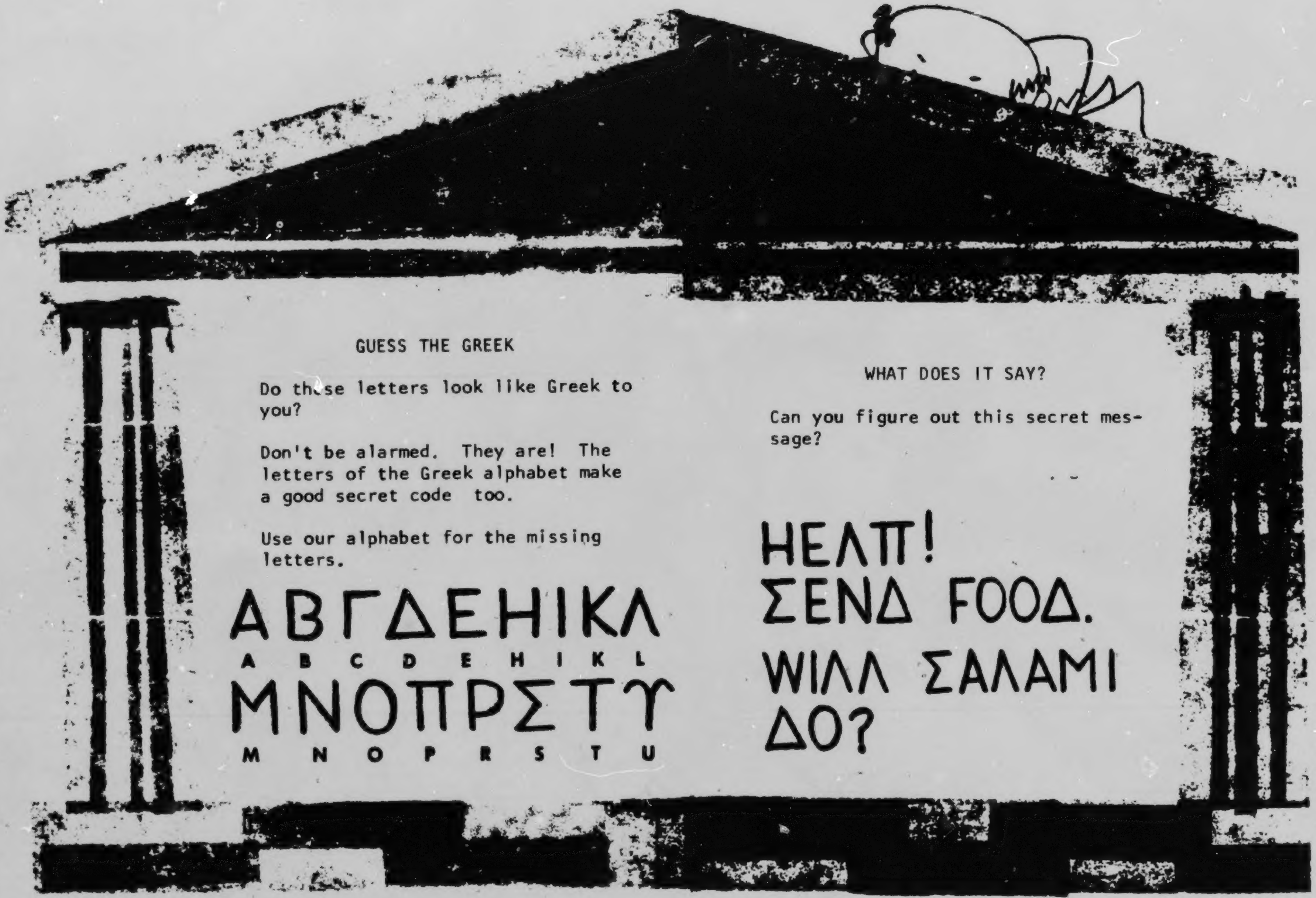
From Symbol Sourcebook by Henry Dreyfus. McGraw-Hill, New York, 1972.

HANDLING OF GOODS


OR
FRAGILE
HANDLE with CARE
KEEP DRY
PROTECT from HEAT
KEEP FROZEN
PROTECT against COLD
THIS WAY UP
SLING HERE
USE NO HOOKS
STACKING LIMIT
DO NOT STACK
INSERT LIFT CART HERE
LIFT HERE
PULL
OPEN HERE
DO NOT TUMBLE
DO NOT ROLL
GROSS WEIGHT
NET WEIGHT
CONTENT in LITERS
DIMENSIONS
TOP HEAVY
HEAVY WEIGHT THIS END
BALANCE (Center of Gravity)
POISON
orange
EXPLOSIVE
RADIOACTIVE
RADIOACTIVITY, Low Level
INFLAMMABLE LIQUID
INFLAMMABLE SOLID
SPONTANEOUSLY COMBUSTIBLE
DANGEROUS when WET

- ▲ This label is also made with the title Poison Gas
- ● Vertical bars indicate progressive levels of radioactivity (II) means Medium, (III) means High
- * This label is also made with the title Inflammable Gas
- • [illegible] recommendation

From Symbol Sourcebook by Henry Dreyfus. McGraw-Hill, New York, 1972.



GUESS THE GREEK

Do these letters look like Greek to you?

Don't be alarmed. They are! The letters of the Greek alphabet make a good secret code too.

Use our alphabet for the missing letters.

Α	Β	Γ	Δ	Ε	Η	Ι	Κ	Λ
A	B	C	D	E	H	I	K	L

Μ	Ν	Ο	Π	Ρ	Σ	Τ	ϒ
M	N	O	P	R	S	T	U

WHAT DOES IT SAY?

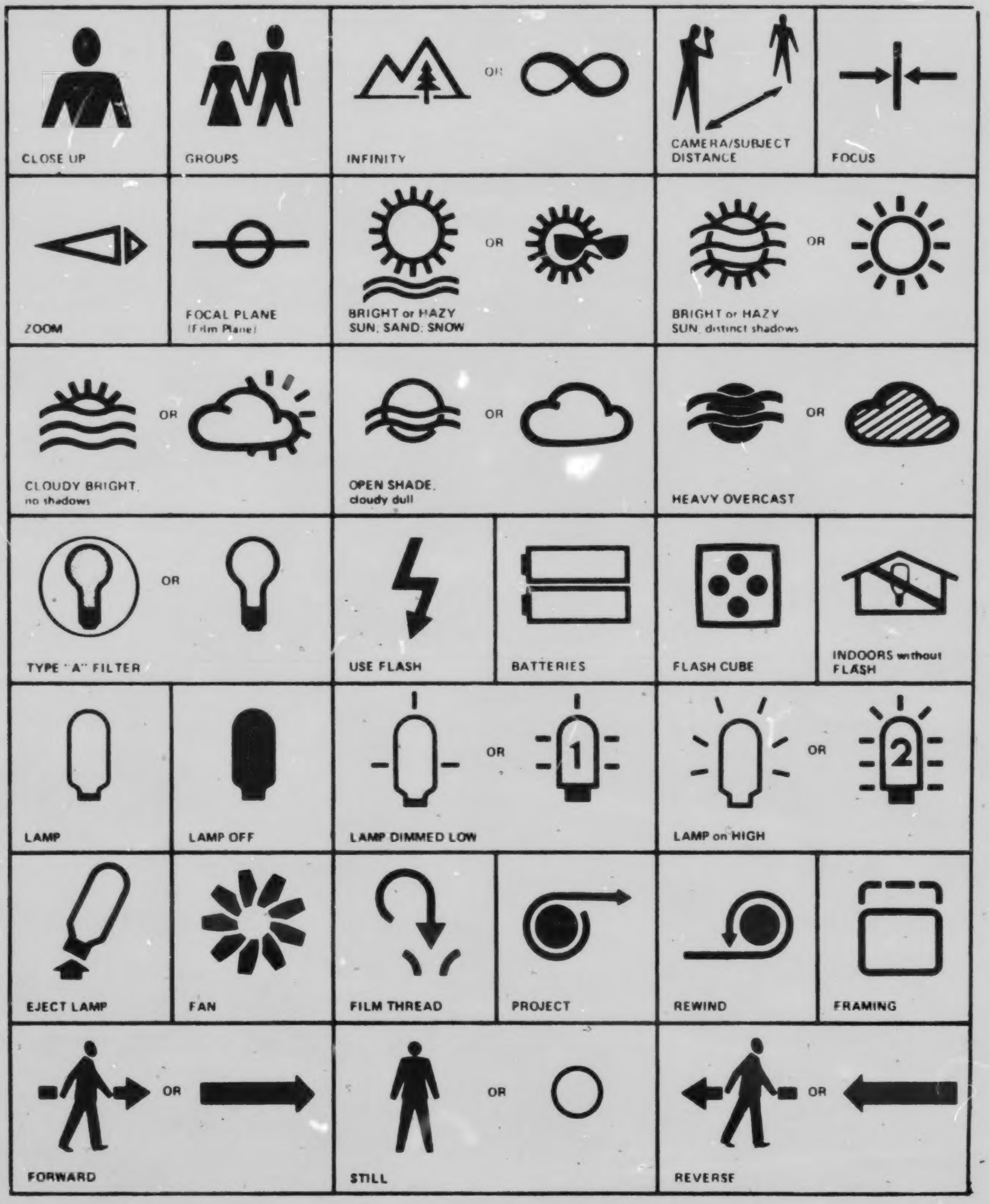
Can you figure out this secret message?

ΗΕΛΠ!
ΣΕΝΔ FΟΟΔ.
WΙΛΛ ΣΑΛΑΜΙ
ΔΟ?

3.3.10.E.

From Arrow Book of Project Fun by Leonore Klein. Scholastic Book Services, 1965.

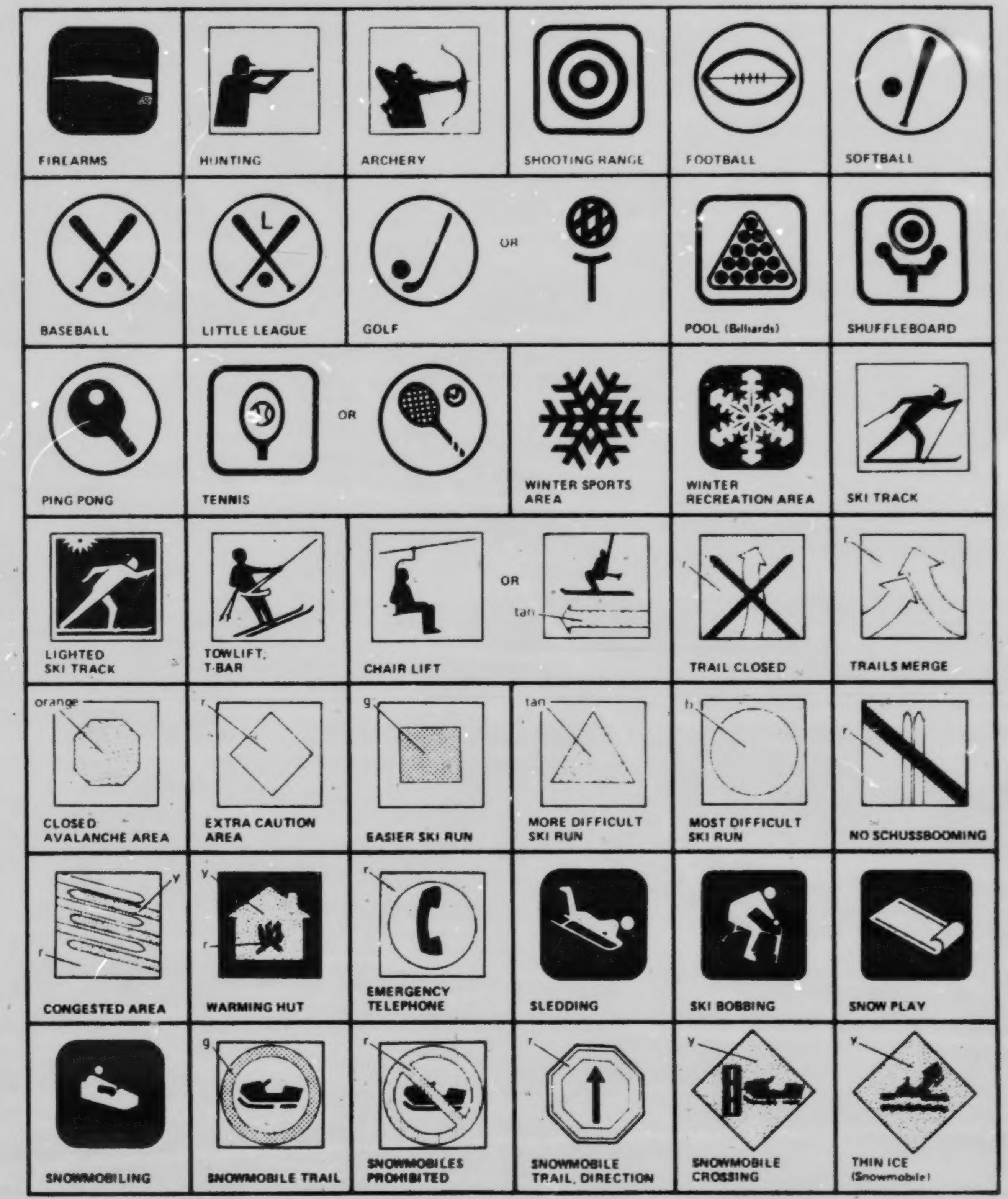
PHOTOGRAPHY


CLOSE UP
GROUPS
INFINITY
OR
CAMERA/SUBJECT DISTANCE
FOCUS
ZOOM
FOCAL PLANE (Film Plane)
BRIGHT or HAZY SUN, SAND, SNOW
OR
BRIGHT or HAZY SUN, distinct shadows
OR
CLOUDY BRIGHT, no shadows
OR
OPEN SHADE, cloudy dull
OR
HEAVY OVERCAST
OR
TYPE "A" FILTER
OR
USE FLASH
BATTERIES
FLASH CUBE
INDOORS without FLASH
LAMP
LAMP OFF
LAMP DIMMED LOW
OR
1
LAMP on HIGH
OR
2
EJECT LAMP
FAN
FILM THREAD
PROJECT
REWIND
FRAMING
FORWARD
OR
STILL
OR
REVERSE
OR

From Symbol Sourcebook by Henry Dreyfus. McGraw-Hill, New York, 1972.

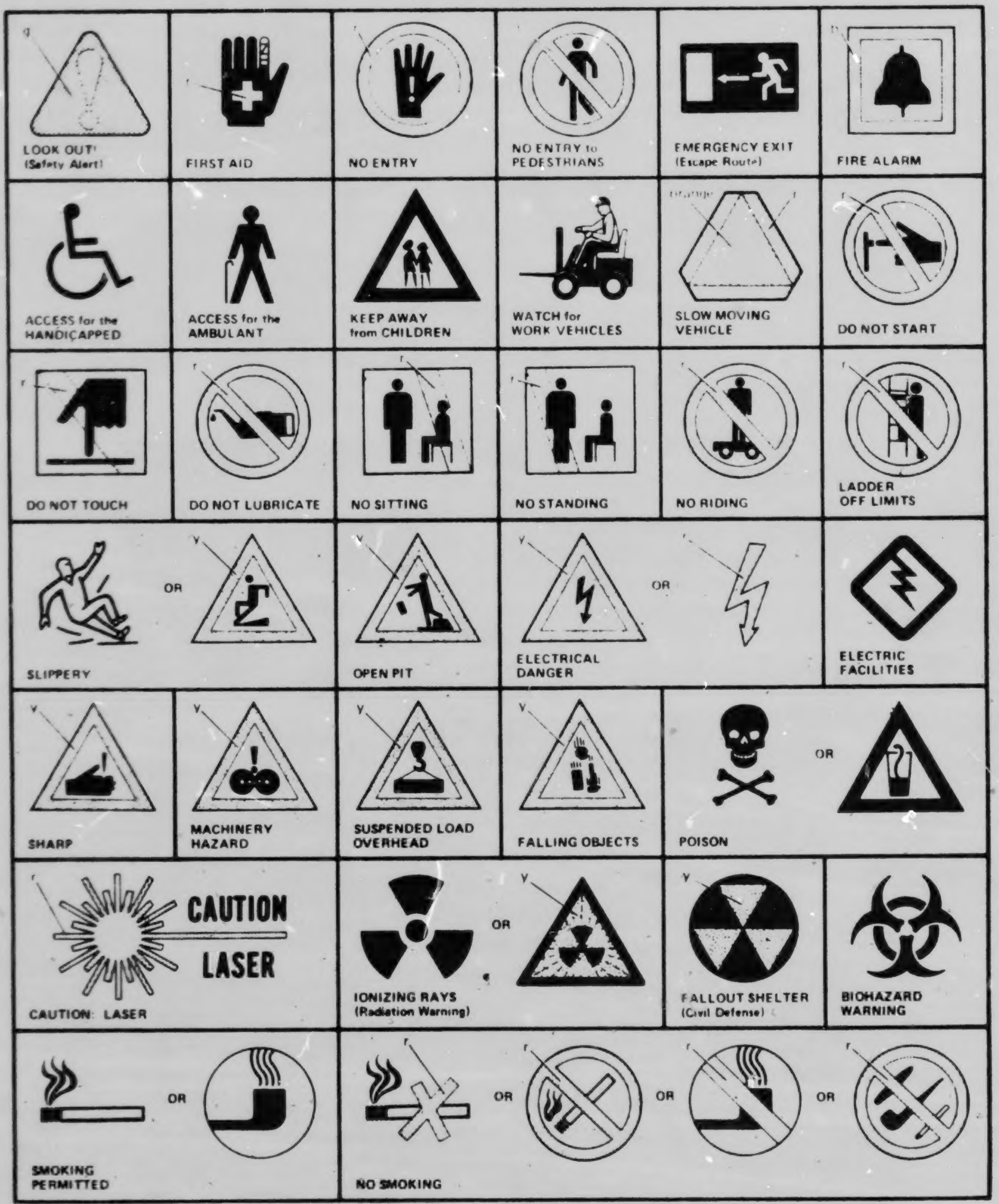
3.3.10.D.

RECREATION


FIREARMS
HUNTING
ARCHERY
SHOOTING RANGE
FOOTBALL
SOFTBALL
BASEBALL
LITTLE LEAGUE
L
GOLF
OR
POOL (Billiards)
SHUFFLEBOARD
PING PONG
TENNIS
OR
WINTER SPORTS AREA
WINTER RECREATION AREA
SKI TRACK
LIGHTED SKI TRACK
TOWLIFT, T-BAR
CHAIR LIFT
OR
tan
r
TRAIL CLOSED
r
TRAILS MERGE
orange
CLOSED AVALANCHE AREA
r
EXTRA CAUTION AREA
g
EASIER SKI RUN
tan
MORE DIFFICULT SKI RUN
b
MOST DIFFICULT SKI RUN
r
NO SCHUSSBOOMING
y
r
CONGESTED AREA
y
r
WARMING HUT
r
EMERGENCY TELEPHONE
SLEDDING
SKI BOBBING
SNOW PLAY
SNOWMOBILING
g
SNOWMOBILE TRAIL
r
SNOWMOBILES PROHIBITED
r
SNOWMOBILE TRAIL, DIRECTION
y
SNOWMOBILE CROSSING
y
THIN ICE (Snowmobile)

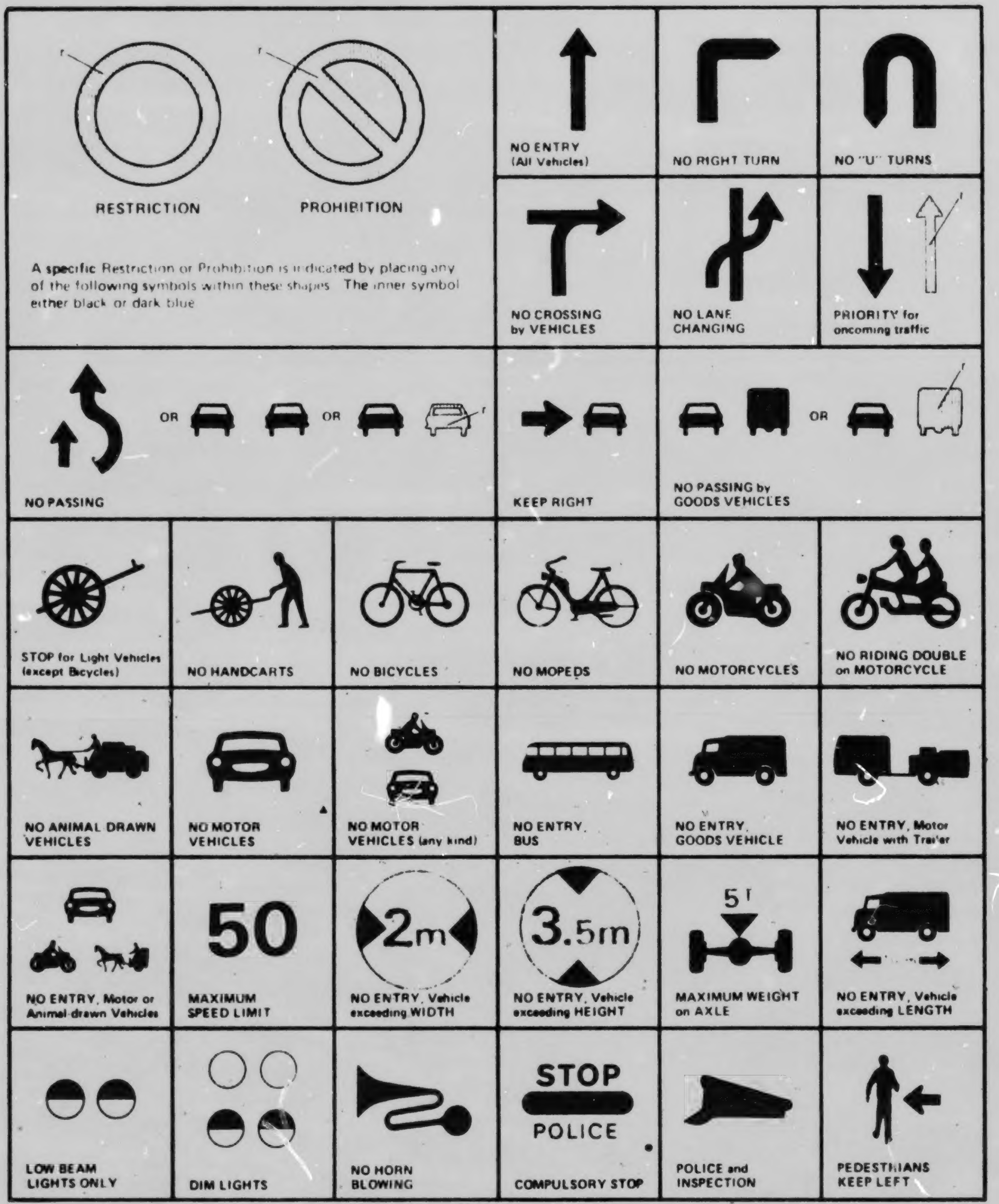
From Symbol Sourcebook by Henry Dreyfus. McGraw-Hill, New York, 1972.

SAFETY


LOOK OUT!
(Safety Alert)
FIRST AID
NO ENTRY
NO ENTRY to PEDESTRIANS
EMERGENCY EXIT
(Escape Route)
FIRE ALARM
ACCESS for the HANDICAPPED
ACCESS for the AMBULANT
KEEP AWAY from CHILDREN
WATCH for WORK VEHICLES
orange
SLOW MOVING VEHICLE
DO NOT START
DO NOT TOUCH
DO NOT LUBRICATE
NO SITTING
NO STANDING
NO RIDING
LADDER OFF LIMITS
OR
SLIPPERY
OPEN PIT
OR
ELECTRICAL DANGER
ELECTRIC FACILITIES
SHARP
MACHINERY HAZARD
SUSPENDED LOAD OVERHEAD
FALLING OBJECTS
OR
POISON
CAUTION
LASER
CAUTION: LASER
OR
IONIZING RAYS
(Radiation Warning)
FALLOUT SHELTER
(Civil Defense)
BIOHAZARD WARNING
OR
SMOKING PERMITTED
OR
OR
OR
NO SMOKING

* ISO Recommendation

From Symbol Sourcebook by Henry Dreyfus. McGraw-Hill, New York, 1972.


r
r
RESTRICTION
PROHIBITION
NO ENTRY (All Vehicles)
NO RIGHT TURN
NO "U" TURNS
NO CROSSING by VEHICLES
NO LANE CHANGING
r
PRIORITY for oncoming traffic
OR
OR
r
NO PASSING
KEEP RIGHT
OR
r
NO PASSING by GOODS VEHICLES
STOP for Light Vehicles (except Bicycles)
NO HANDCARTS
NO BICYCLES
NO MOPEDS
NO MOTORCYCLES
NO RIDING DOUBLE on MOTORCYCLE
NO ANIMAL DRAWN VEHICLES
NO MOTOR VEHICLES ▲
NO MOTOR VEHICLES (any kind)
NO ENTRY, BUS
NO ENTRY, GOODS VEHICLE
NO ENTRY, Motor Vehicle with Trailer
NO ENTRY, Motor or Animal-drawn Vehicles
50
MAXIMUM SPEED LIMIT
2m
NO ENTRY, Vehicle exceeding WIDTH
3.5m
NO ENTRY, Vehicle exceeding HEIGHT
5 T
MAXIMUM WEIGHT on AXLE
NO ENTRY, Vehicle exceeding LENGTH
LOW BEAM LIGHTS ONLY
DIM LIGHTS
NO HORN BLOWING
STOP
POLICE ●
COMPULSORY STOP
POLICE and INSPECTION
PEDESTRIANS KEEP LEFT

A specific Restriction or Prohibition is indicated by placing any of the following symbols within these shapes. The inner symbol either black or dark blue.

▲ **Exception**: Two wheeled motor vehicles without side cars

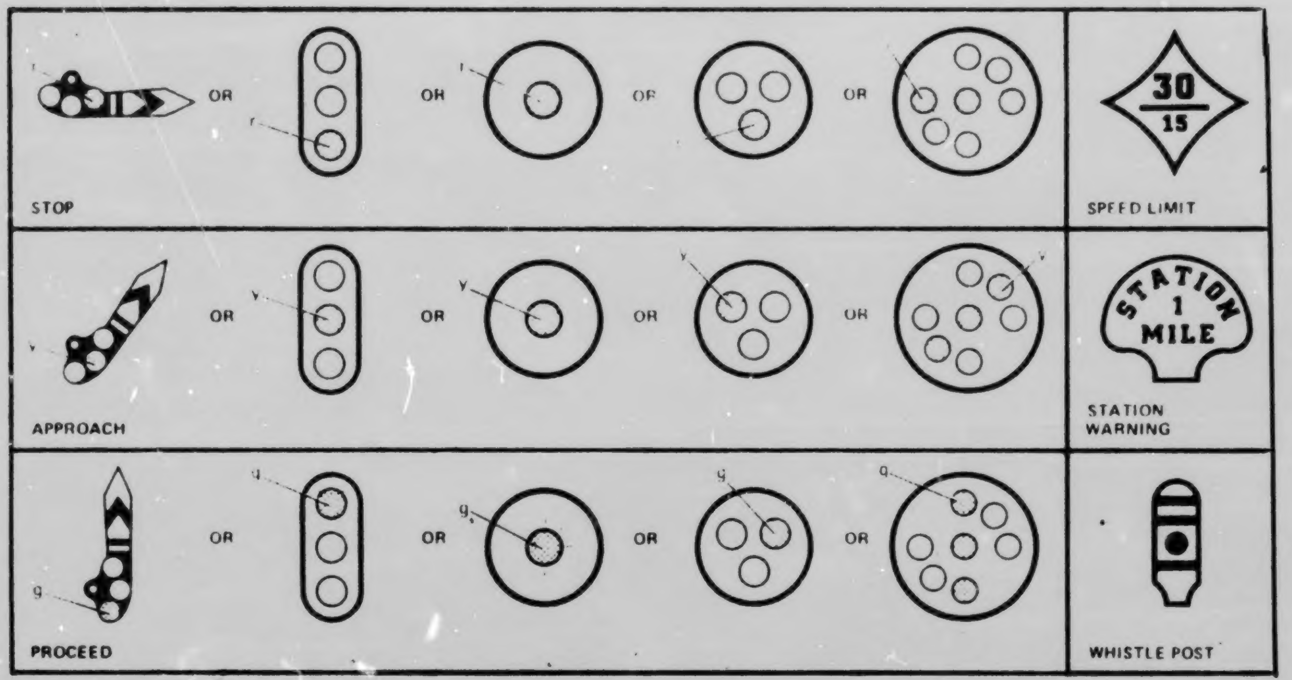
● Other reasons for stopping may be indicated. **Example**: STOP CHILDREN, STOP WEIGHT CHECK

From Symbol Sourcebook by Henry Dreyfus. McGraw Hill, New York, 1972.

3.3.10.D.

TRAFFIC

Rail

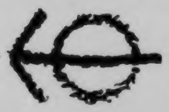

r
OR
r
OR
r
OR
r
OR
30
15
STOP
SPEED LIMIT
y
OR
y
OR
y
OR
y
OR
y
STATION
1
MILE
APPROACH
STATION WARNING
g
OR
g
OR
g
OR
g
OR
g
PROCEED
WHISTLE POST

* Top number is for Passenger Train, bottom, Freight Train.

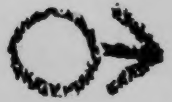
KNIGHTS OF THE ROAD

Nonchalant and carefree as they may appear, the hoboes are sufficiently sophisticated to have produced a system of graphic symbols all their own. What is more, it is international, and gypsies around the world can translate it into their mother tongues.

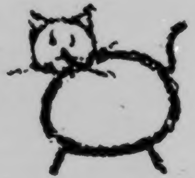
If you should come upon a country wall and find this message chalked on it, could *you* read it?



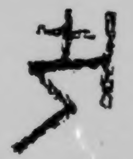
No use going in this direction



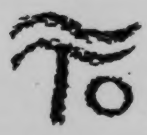
This way



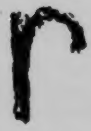
Kind lady lives here



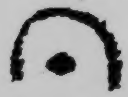
If you work, she will feed you.



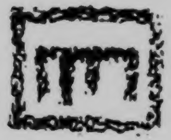
You can sleep in hayloft.



If sick, they'll care for you.



Be careful



Vicious dog here

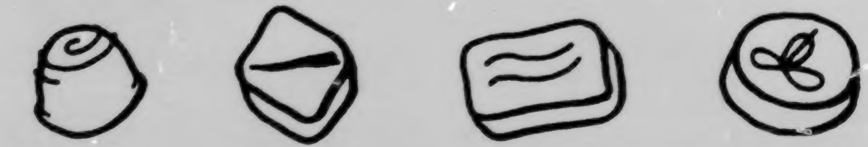
From Symbol Sourcebook, Henry Dreyfus. McGraw-Hill, New York, 1972.

HOW TO AVOID A RASPBERRY CREAM

Do you open a box of chocolates – and hesitate?

You want a chewy caramel. But short of poking your finger into the bottom of each piece, how do you know what you will get?

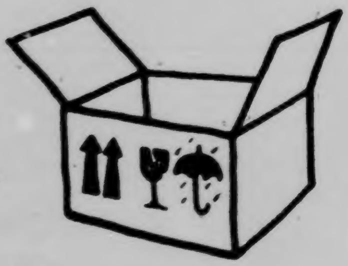
Try selecting by symbols!



You stand a good chance of getting what you are after if you correctly decipher the "squiggle" code with which most chocolates are marked.

But beware, this method isn't infallible: not all candy makers use the same symbols. You might still end up with that raspberry cream!

MOSCOW TO NEW YORK



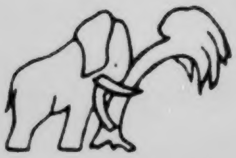
During a visit to the Soviet Union, I shipped a carton of toys home to the United States. Other than the address of destination, it had stencilled on it just three symbol directions:

2 arrows (this side up)
a goblet (fragile)
an umbrella (keep dry)

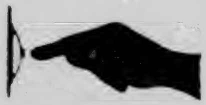
Considering that the shipment might be routed from Moscow via Constantinople, Piraeus, Genoa, and Lisbon before it reached the United States, and that the handlers in each port perhaps would not read any language other than their own, the message "spoke" in six tongues.

From Symbol Sourcebook by Henry Dreyfus. McGraw-Hill, New York, 1972.

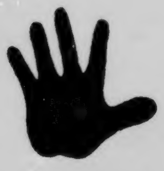
THE SEARCH FOR PUSH AND PULL



As often happens, an elementary problem has become the most elusive to solve. It would appear easy to convey these simplest of actions: Push and Pull. But they defy obvious graphic delineation.



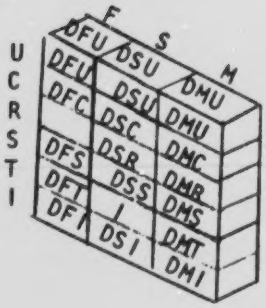
Certainly it is unfortunate that we can include no accepted symbols for these actions in our lexicon of Basic Symbols.



An internationally reprinted newspaper account of our symbol work reported our difficulty in finding satisfactory Push and Pull symbols. As a result, we received hundreds of suggestions.

Among these were a variety of drawings of hands. Although hands do indeed perform the act of pushing and pulling, these suggestions are all either closely related to STOP signs, or are limited in application or just plain confusing.

From Symbol Sourcebook by Henry Dreyfus. McGraw-Hill, New York, 1972.



Recommended for Grade 6 only

Concept Divergent Production

Curricular Objective

3.3.11 The student will transform five of the symbols he has made into a symbolic picture.

Input

Discuss the idea of a symbol having deeper meaning than the object itself.

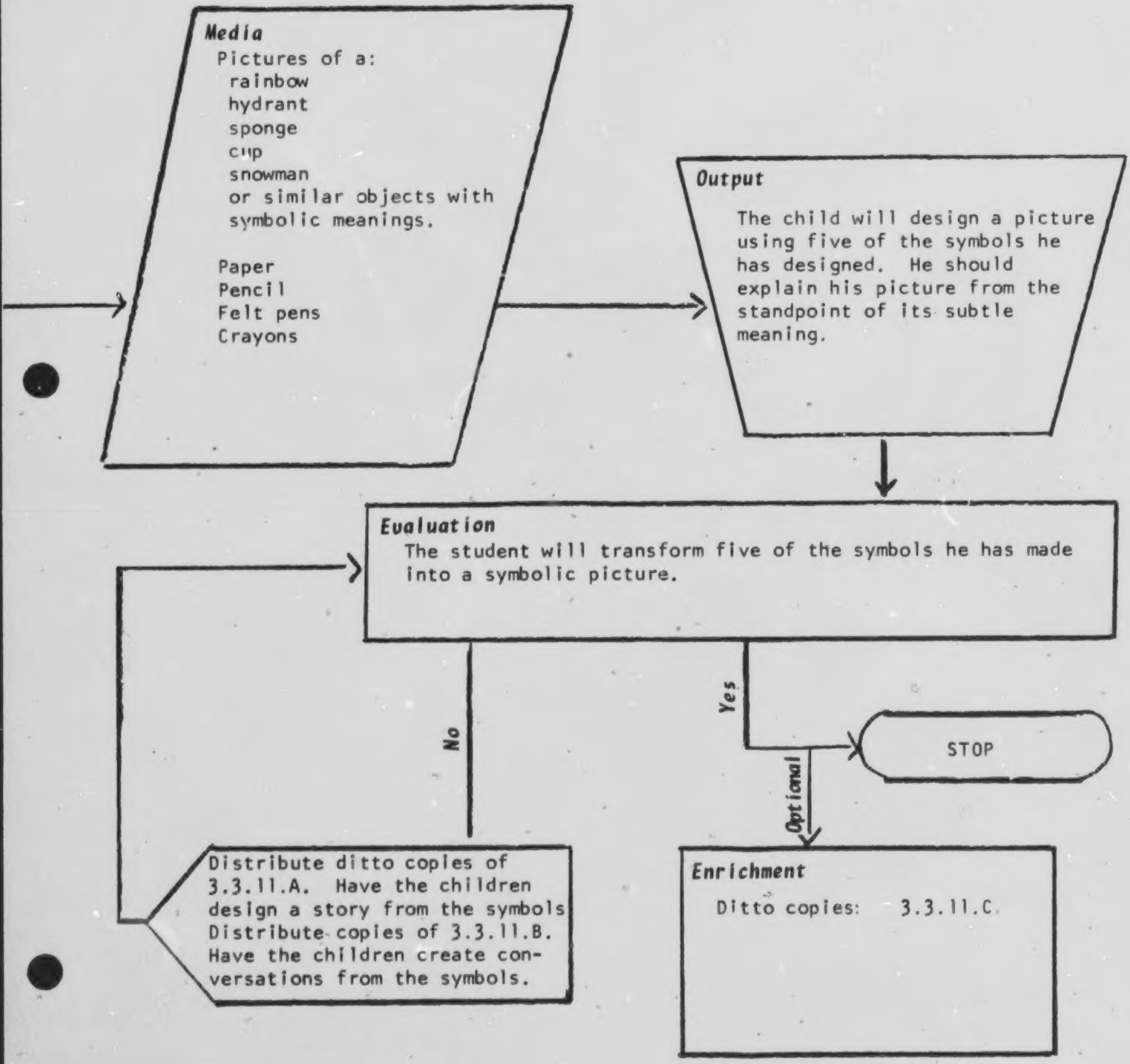
Learning Opportunities

I. Show pictures of a:
   rainbow fire hydrant
   sponge cup
   snowman

II. Discuss what things the pictures signify, i.e.,
   rainbow - end of storm, beauty, pot of gold, luck
   hydrant - end of fire, protection, wading
   sponge - cleaning, mop-up
   cup - coffee, drinking, survival, charity
   snowman - fun, mountains, snow

III. Discuss how these symbols might be combined into a picture that tells a story.

IV. Have children analyze the symbols they have designed.
   A. Have them select the five they want to use to make a picture



Media

Pictures of a:
- rainbow
- hydrant
- sponge
- cup
- snowman
- or similar objects with symbolic meanings.

Paper
Pencil
Felt pens
Crayons

Output

The child will design a picture using five of the symbols he has designed. He should explain his picture from the standpoint of its subtle meaning.

Evaluation

The student will transform five of the symbols he has made into a symbolic picture.

Distribute ditto copies of 3.3.11.A. Have the children design a story from the symbols. Distribute copies of 3.3.11.B. Have the children create conversations from the symbols.

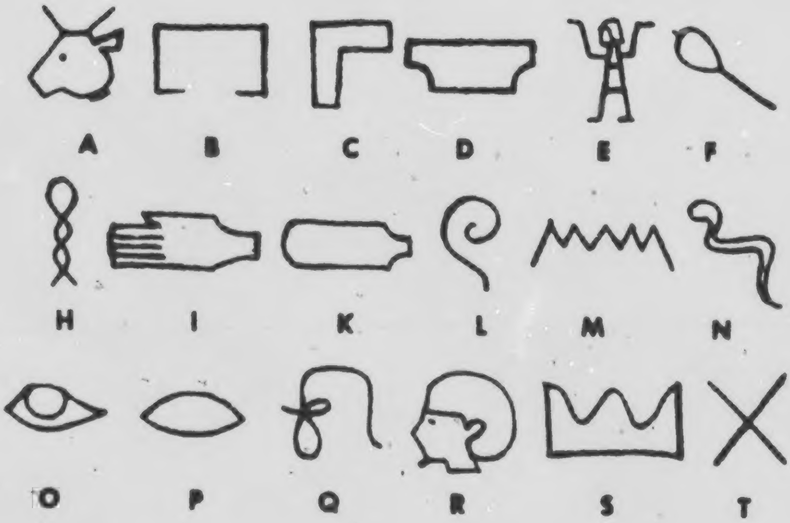
Enrichment

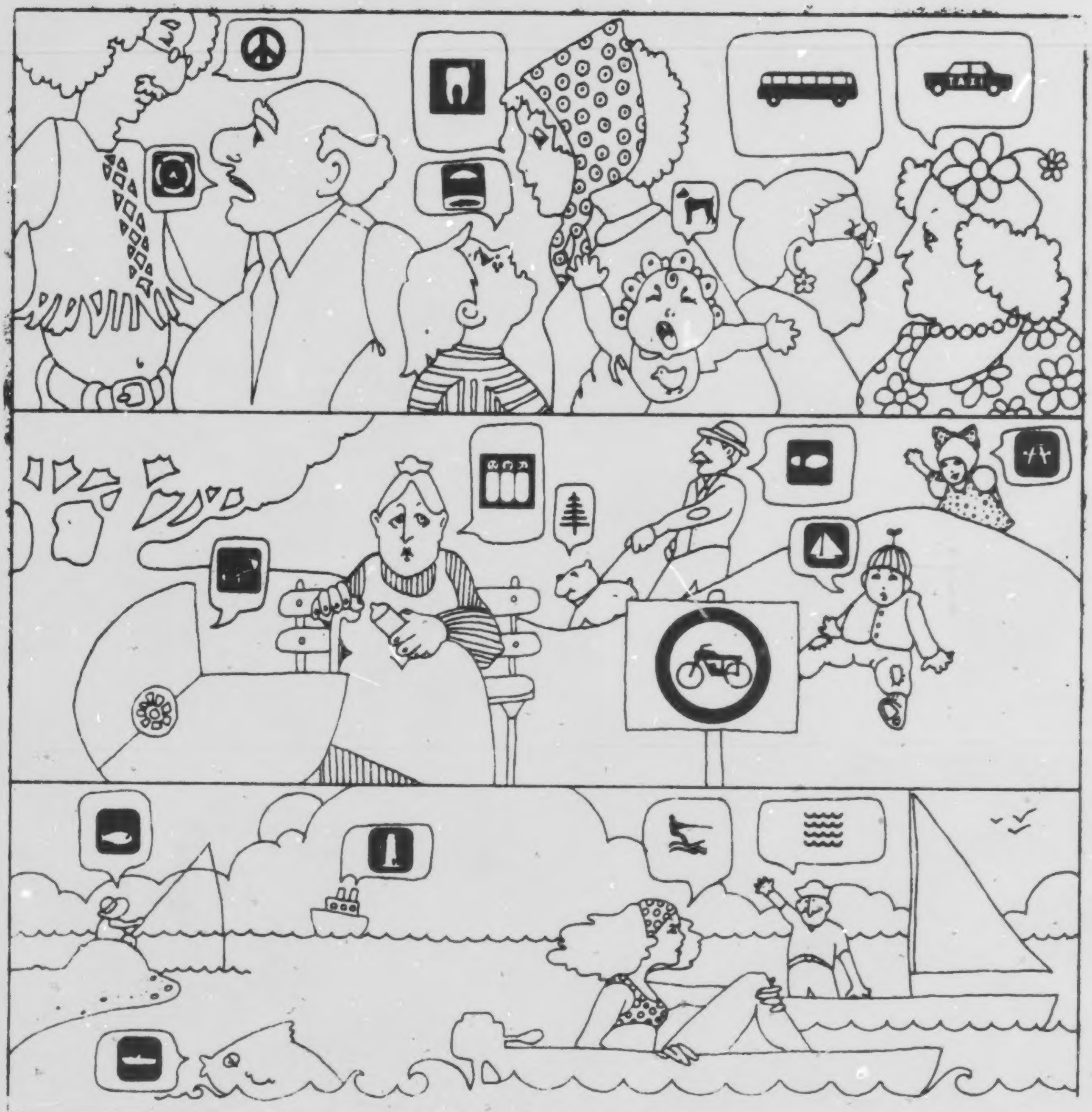
Ditto copies: 3.3.11.C.

SAY IT WITH PICTURES

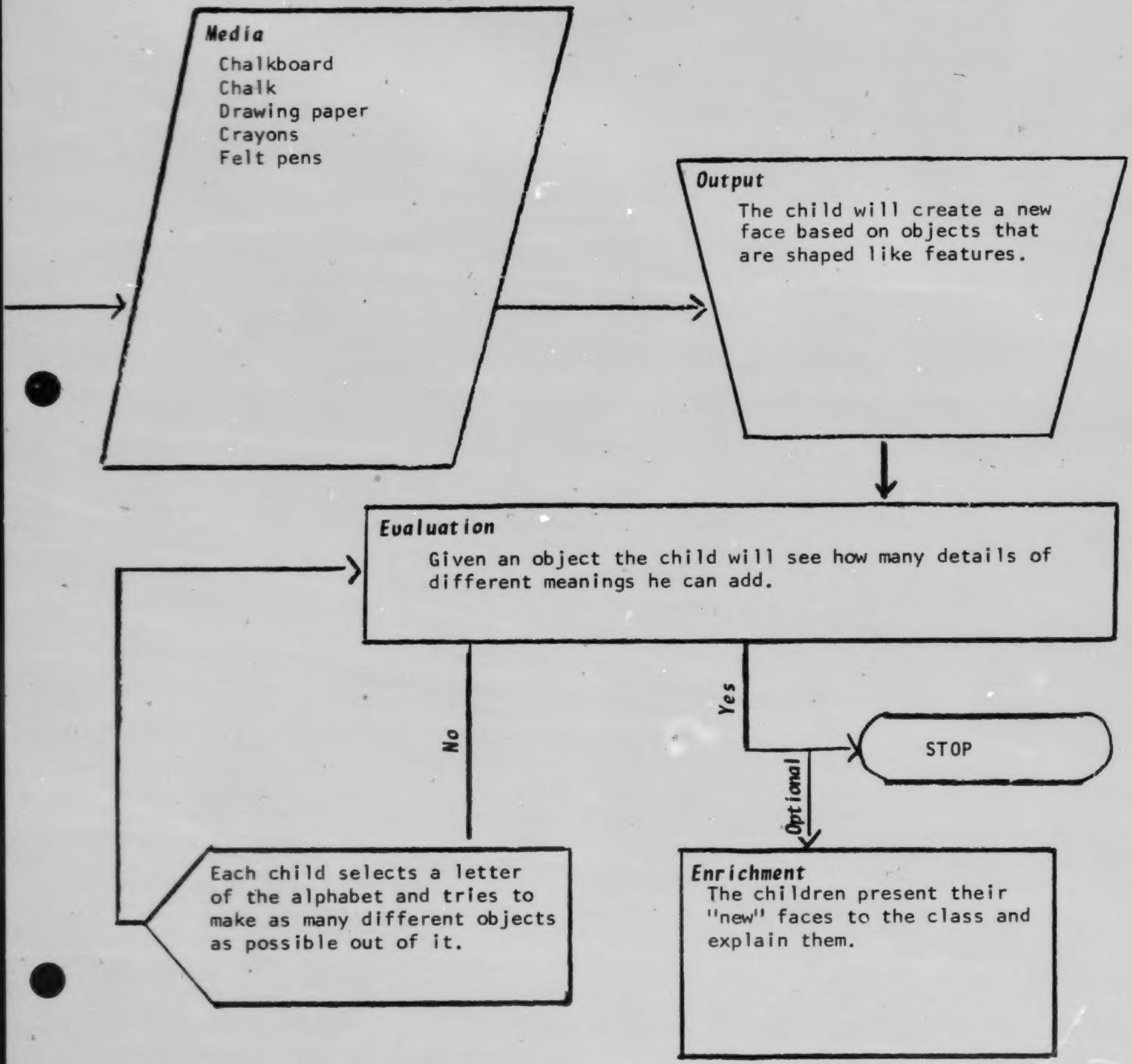
The ancient Egyptians sent messages to each other in pictures called hieroglyphics. Say: hy-ro-GLIF-icks

Notice that there are no pictures for G, J, U, V, W, X, Y, and Z. Use our alphabet when you need to.





From Kaiser Aluminum News, Kaiser Aluminum & Chemical Corporation, Oakland, 1968.



Media

Chalkboard
Chalk
Drawing paper
Crayons
Felt pens

Output

The child will create a new face based on objects that are shaped like features.

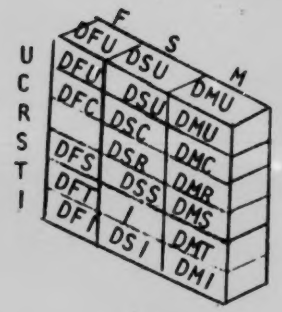
Evaluation

Given an object the child will see how many details of different meanings he can add.

Each child selects a letter of the alphabet and tries to make as many different objects as possible out of it.

Enrichment

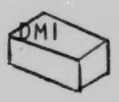
The children present their "new" faces to the class and explain them.



Concept Divergent Production

Curricular Objective

3.3.13 The child will create original responses to a series of problems presented to him.



Input

Discuss what "original" responses may be, such as:

- ideas that "break the mold"
- ideas that combine unlike objects
- ideas that are totally unexpected

Learning Opportunities

I. Strange Object Game
  A. Form a circle with the children.
  B. Hold up an imaginary object and say that you are holding a "Zalung."
    1. Explain that the "Zalung" was found in a remote corner of the earth.
    2. Explain that it may have come from outer space and that each child will be able to "hold" it and "examine" it.
  C. As the child pretends to hold it, he is to describe what it is like, including: size, texture, color, weight, etc.

II. Cartoon Punch Lines
  A. Give each child a cut-up comic strip with the last picture omitted.
  B. Each child is to arrange the comic strip in order and then supply as many endings as he can - this may be orally, in writing, or cartoon form.

BE NOT ONLY FLEXIBLE --- BUT ALSO ORIGINAL

1. Classify these words in as many ways as possible. Classified according to:

glob - durb - yok - klig - frazigg - flur -

mux - grun - clib - ron - ufra - zoun - bot

2. Think of the title of the last movie you saw. Now think of 5 other titles.

3. What one word could you think of for:

a supper made of left-overs?

crumbs in the bed?

a crowd rushing out on the football field before game's end?

4. Think of a new candy bar you would like to see in existence.

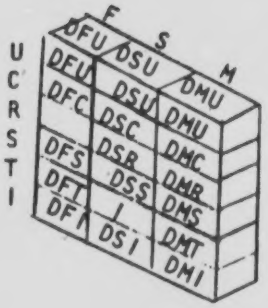
What would it taste like?

What consistency would it be?

What would the wrapper look like?

How would you get people to buy it?

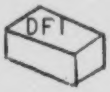
Would the cost be reasonable?



Concept Divergent Production

Curricular Objective

3.4.1 Given an object to improve, the student will list the attributes of the object in order to change each one.



Input

Discuss attributes as physical characteristics of an object. Use attribute blocks to help the child discover the characteristics (attributes) of each block.

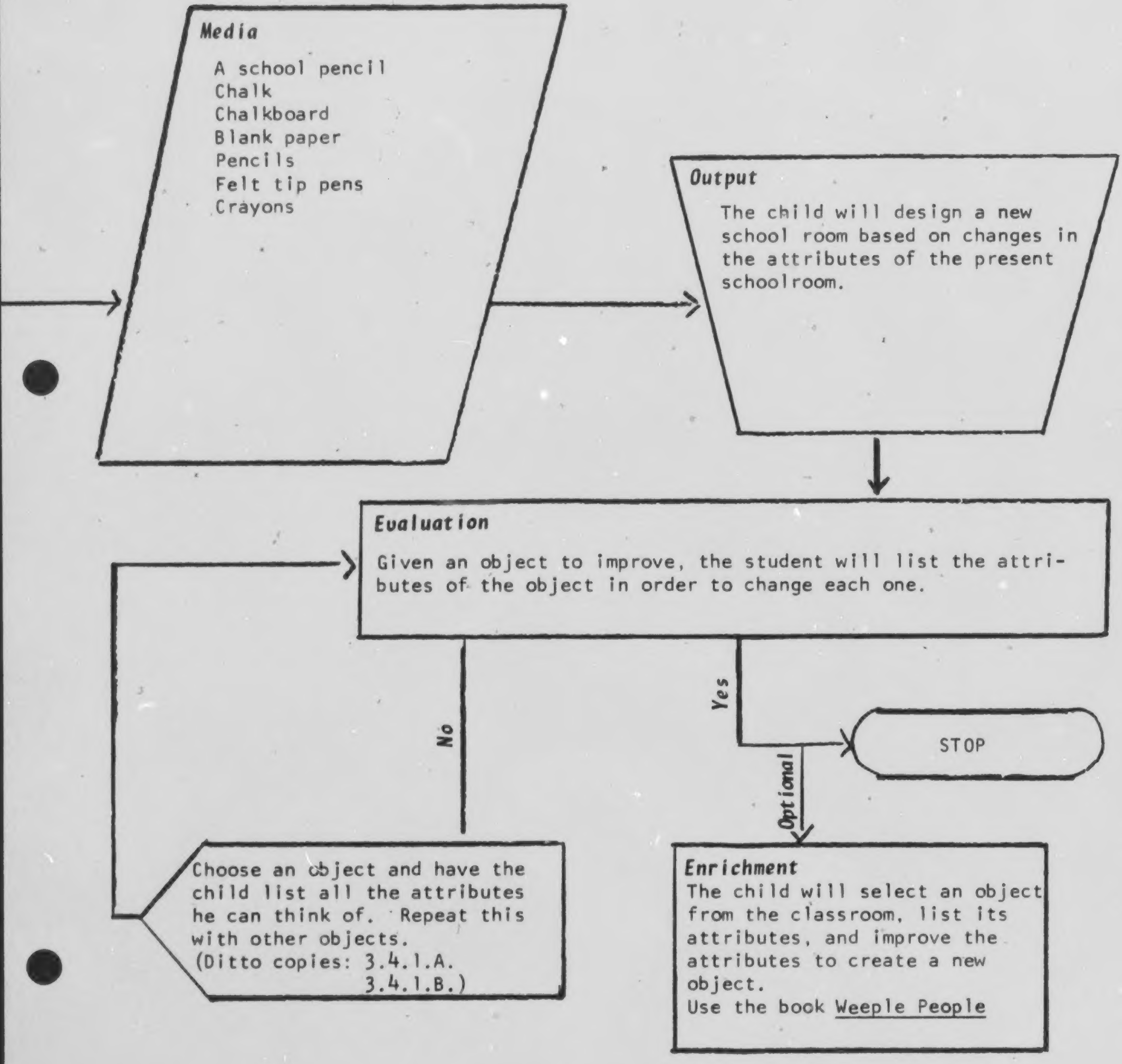
Learning Opportunities

I. Discuss an ordinary school room and the desire to improve it so it would be more functional.

II. Brainstorm and list on the board the attributes of the classroom.
   A. Take each attribute and discuss whether that attribute should remain the same or be improved.
   B. Make a list of the improvements on the board.

III. Have the child design a new school room based on these changes.*
   A. He may make a diagram and label the new attributes on it.

*Or he may design: a school desk
a chalkboard



Media

A school pencil
Chalk
Chalkboard
Blank paper
Pencils
Felt tip pens
Crayons

Output

The child will design a new school room based on changes in the attributes of the present schoolroom.

Evaluation

Given an object to improve, the student will list the attributes of the object in order to change each one.

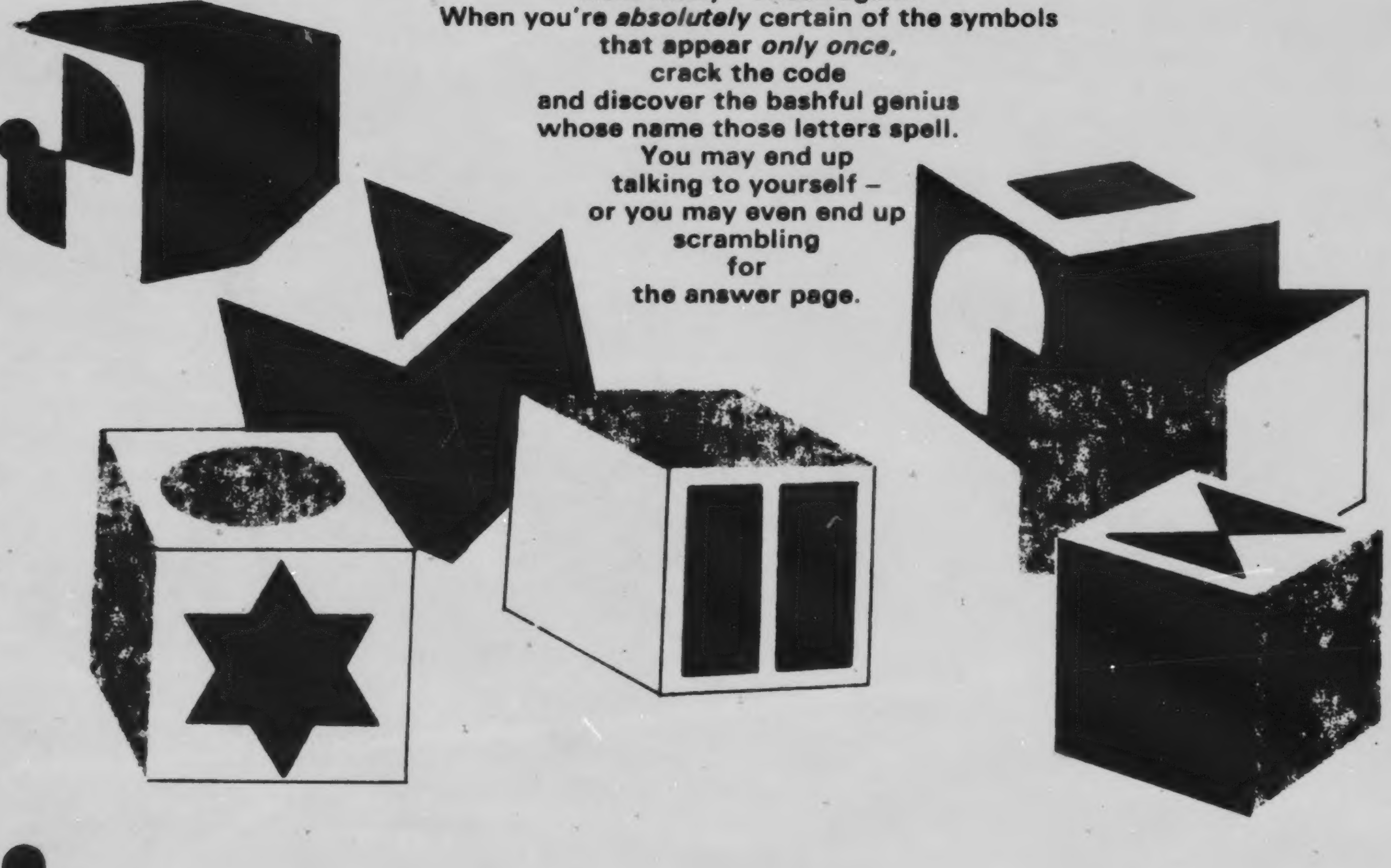
Choose an object and have the child list all the attributes he can think of. Repeat this with other objects.
(Ditto copies: 3.4.1.A.
3.4.1.B.)

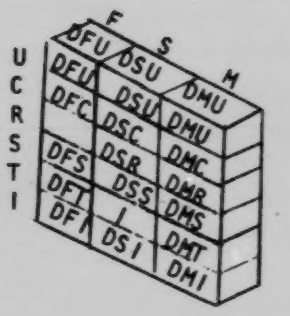
Enrichment

The child will select an object from the classroom, list its attributes, and improve the attributes to create a new object.
Use the book Weeple People

BASHFUL GENIUS

In this heap of coded cubes,
most symbols repeat themselves.
Dig through the heap.
All symbols that appear twice or more
can be checked off the list
you are about to make.
The perspectives confuse you?
***That* (ho, ho!) is part of the plan.**
When you've checked and double-checked,
you will discover a certain number of symbols
that appear only once.
How many? Check again.
When you're *absolutely* certain of the symbols
that appear *only once*,
crack the code
and discover the bashful genius
whose name those letters spell.
You may end up
talking to yourself –
or you may even end up
scrambling
for
the answer page.



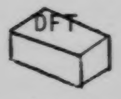


Recommended for Grade 6 only

Concept Divergent Production

Curricular Objective

3.3.12 Given an object the child will see how many details of different meanings he can add.



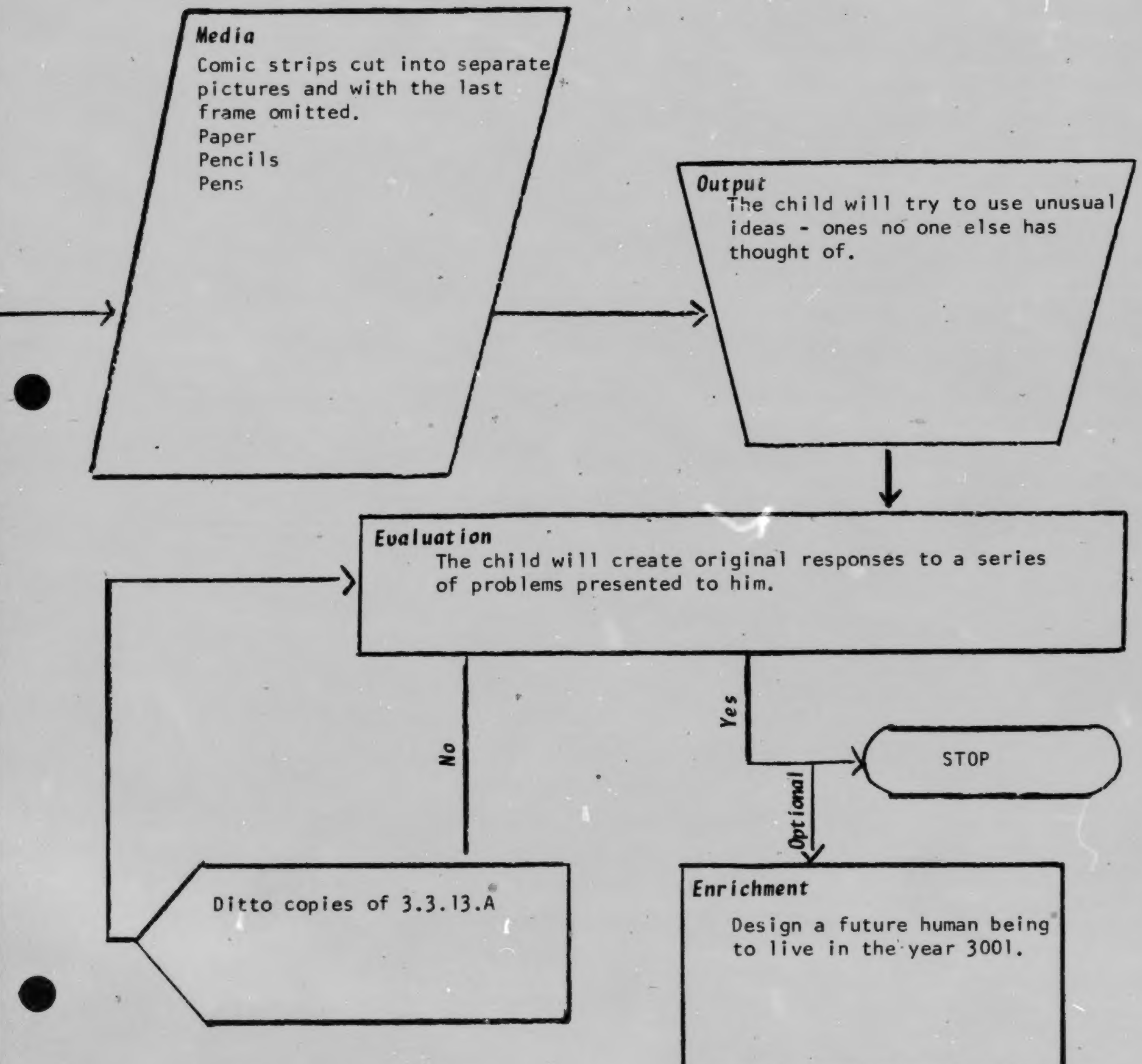
Input

Discuss originality as being able to combine unusual objects to create new and different ideas.

Learning Opportunities

I. Draw an oval to represent a human face on the board.
   A. Discuss the face and what attributes it has to make up its features (such as, eyes, mouth, nose, etc.)
      1. List each feature.
   B. Discuss the shape of each feature.
      1. Add a brief description of the shape of each feature behind its name.

II. Have the children draw an outline of a face on a large piece of paper.
   A. Ask them to take each feature and substitute an object of the same shape for that feature (substitute a teardrop, leaf, lemon - for an eye).
   B. They should then draw in the object instead of the feature and create a "new" face.



Media

Comic strips cut into separate pictures and with the last frame omitted.
Paper
Pencils
Pens

Output

The child will try to use unusual ideas - ones no one else has thought of.

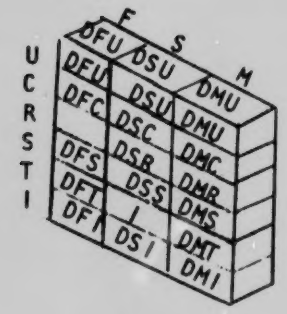
Evaluation

The child will create original responses to a series of problems presented to him.

Ditto copies of 3.3.13.A

Enrichment

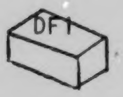
Design a future human being to live in the year 3001.



Concept Divergent Production

Curricular Objective

3.3.14 Given a box of discarded objects (junk) the student will create a new idea and construct a model of it.



Input

Discuss how new ideas come about by people combining unlike objects.

Ask the children to bring in small objects they no longer want. (See: 3.3.14.A)

Tell them they will be using all these different objects in new ways.

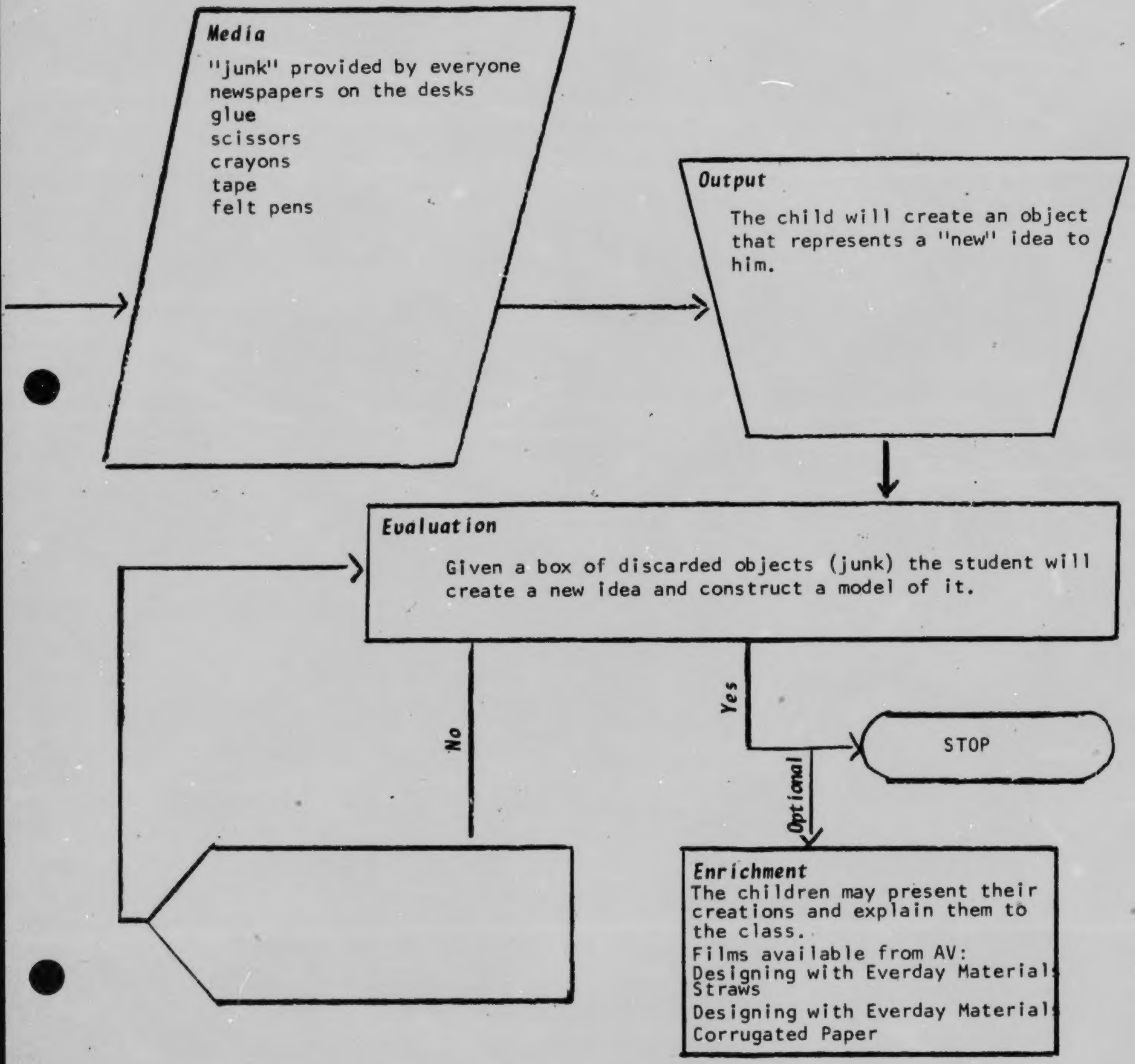
Learning Opportunities

I. Collect the "junk" from the children and put it in several shoe boxes.
   A. All objects brought to school belong to the whole class.
   B. If a child brings some special "junk" of his own, he should keep it to use.

II. The children go a few at a time to select the "junk" they want to use.
   A. Each child brainstorms all the things he can make from the "junk."
   B. Then he creates his most unusual idea.

III. The child then creates a clever name for his "invention."

IV. Evaluate the child's thinking process with the class. (See: 3.3.14.B)



Media

"junk" provided by everyone
newspapers on the desks
glue
scissors
crayons
tape
felt pens

Output

The child will create an object that represents a "new" idea to him.

Evaluation

Given a box of discarded objects (junk) the student will create a new idea and construct a model of it.

Enrichment

The children may present their creations and explain them to the class.

Films available from AV:
Designing with Everday Materials Straws
Designing with Everday Materials Corrugated Paper

3.3.14.A

SUGGESTED "JUNK" ITEMS FOR CHILDREN TO BRING TO SCHOOL

pipe cleaners

tabs from aluminum cans

styrofoam from packing

thread, yarn, string

material

metal objects (nuts, bolts, etc.)

cardboard

paper, paper cups

parts of old toys

wire

used flash cubes

paper clips

bottle caps

small bottles

anything small you care to add

EVALUATION OF THINKING

(This may be oral discussion or written under teacher's direction.)

1. Did you have an idea that you thought would work when you started?

2. Did you end up with the same idea that you started with?

3. If not, did your ideas change several times as you were creating?

4. Was it easy to shift your plans or were you frustrated when things didn't come out as you had planned?

5. Did you come up with any idea by chance or by accident? If so, did you build on that idea and add to it?

6. Did you try to combine unusual objects and use them in new ways? If so, how did they turn out?

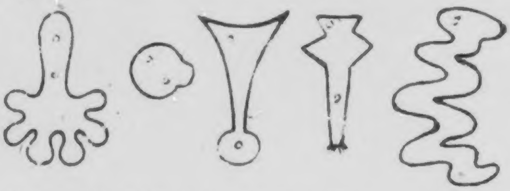
7. Do you feel you learned anything about yourself from doing this? If so, what?

WHAT ATTRIBUTES DO THESE HAVE?

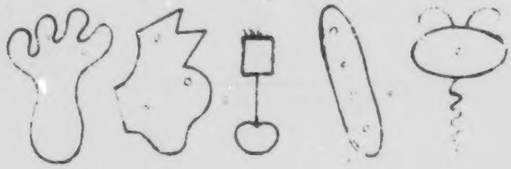
3.4.1.A.

Creature Card 5 Jexums

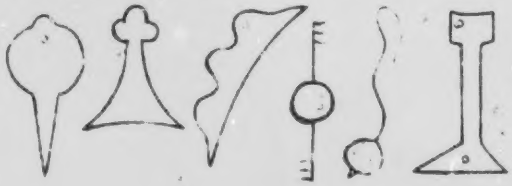
All of these are Jexums



None of these is a Jexum

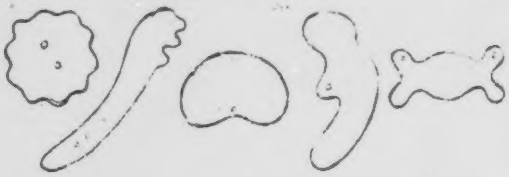


Which of these are Jexums?

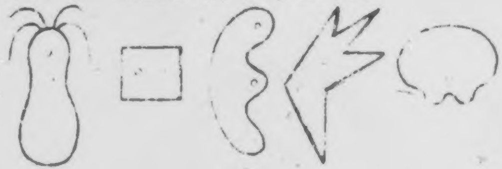


Creature Card 6 Gruffles

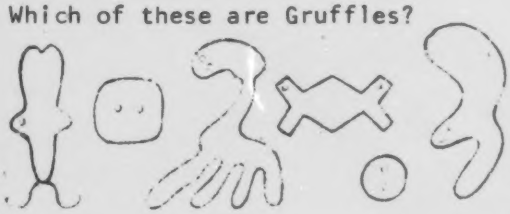
All of these are Gruffles



None of these is a Gruffle

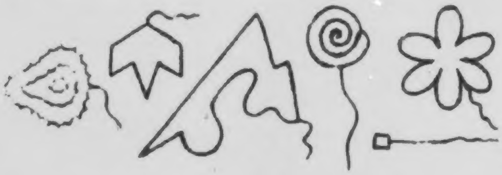


Which of these are Gruffles?

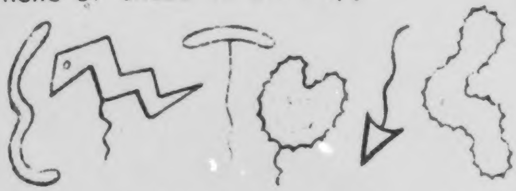


Creature Card 7 Snorps

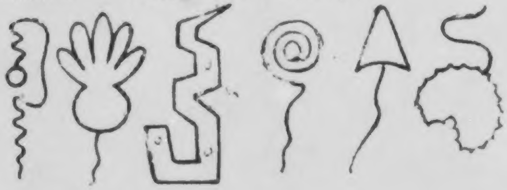
All of these are Snorps



None of these is a Snorp

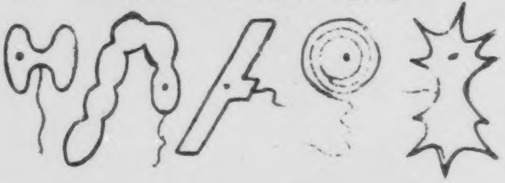


Which of these are Snorps?

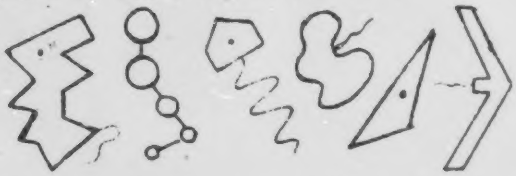


Creature Card 8 Mellinarks

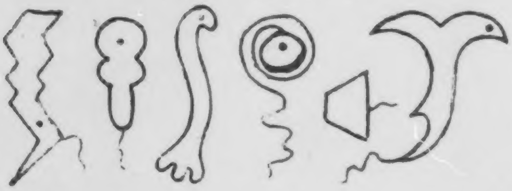
All of these are Mellinarks



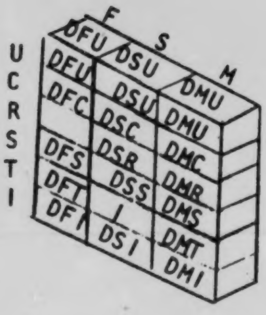
None of these is a Mellinark



Which of these are Mellinarks?



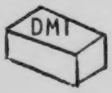
From Attribute Games and Problems, page 75, McGraw-Hill Publishers.



Concept Divergent Production

Curricular Objective

3.4.3 The child will list as many ways as possible to improve a common object.



Input

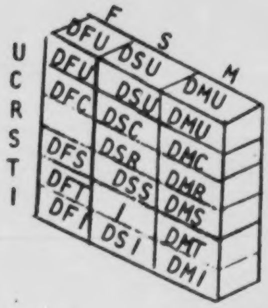
Discuss some common items around the home, such as: toaster, record player.

Discuss how some items have been improved and refined through the ages.

Learning Opportunities

I. Show the children a stapler.
  A. Discuss the attributes of the stapler, such as:
    1. Made of metal
    2. Has color
    3. Loaded in certain way
    4. Base that swings out
    5. Holds staples
  B. Brainstorm how each attribute could be changed to improve the stapler.
  C. After 10 minutes evaluate the ideas that:
    1. Magnify the size - make it larger
    2. Minimize the size
    3. Rearrange any parts
    4. Add other things to it
    5. Use different materials

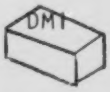
II. Each child selects an object and lists all the ways he could improve it.
  A. Have him share four improvements with the class.



Concept Divergent Production

Curricular Objective

3.4.4 The child will use the attributes of an object to improve it.



Input

Discuss attributes and what they are.

Discuss how looking at the attributes of an object can help inventors think of ways to improve it.

Learning Opportunities

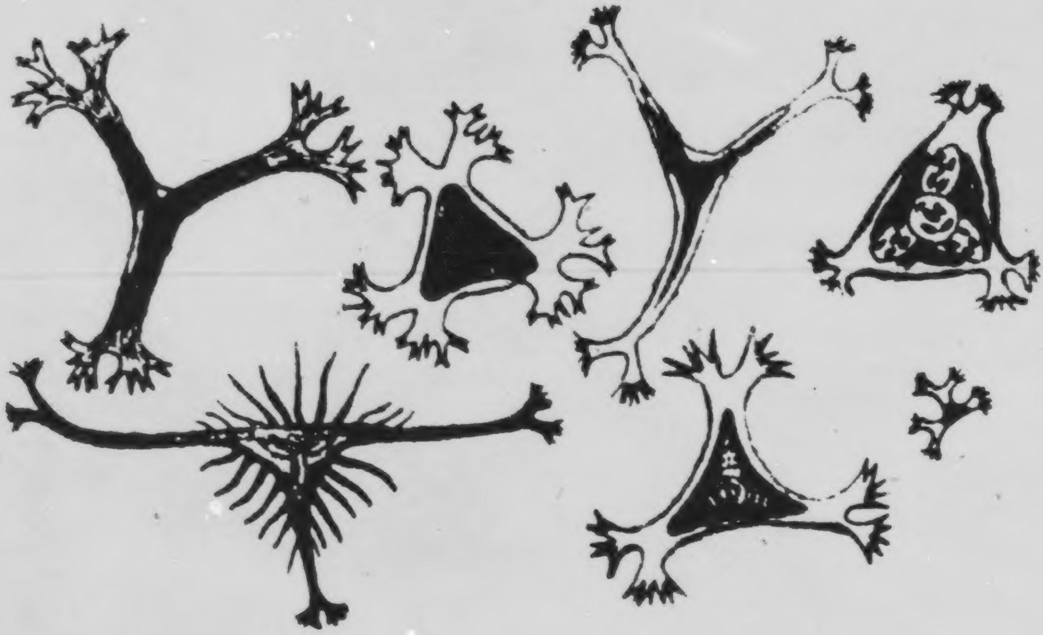
I. Explain that although we have made many advances in our technology there are still many things to improve in our lives.
   A. Discuss divergent thinking as a way of seeing the things about us and finding ideas to improve those things.

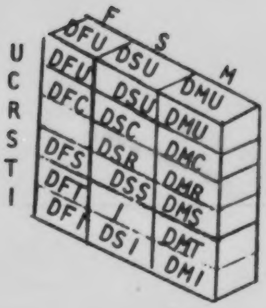
II. Have the children think of their shower at home.
   A. List about 5 attributes of the present shower.
   B. Take each attribute and brainstorm how it could be changed to make the shower better.

III. Evaluate the ideas by discussing:
   A. The ideas that will really make the shower better.
   B. The ideas that are practical in our homes today or in the near future.
   C. Ideas that use materials that will last and withstand use.

CAN YOU DEFINE A ZALOF?

The nonsense figures in the illustration have a nonsense name. They are called Zalofs. After examining them, can you make up a definition of a Zalof, as if you were defining a starfish or a horse? You need a definition that will apply to every figure. You can define a Zalot, but you can't quite see how you do it. Your brain catches the similarities and skips the differences. Presently it has formed a definition for you.

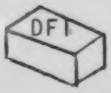




Concept Divergent Production

Curricular Objective

3.4.2. Given a list of ways to change an object the student will use these ways to improve a given object.



Input

Discuss how new ideas come about. Talk about ways in which new ideas can be created from the ordinary things around us.

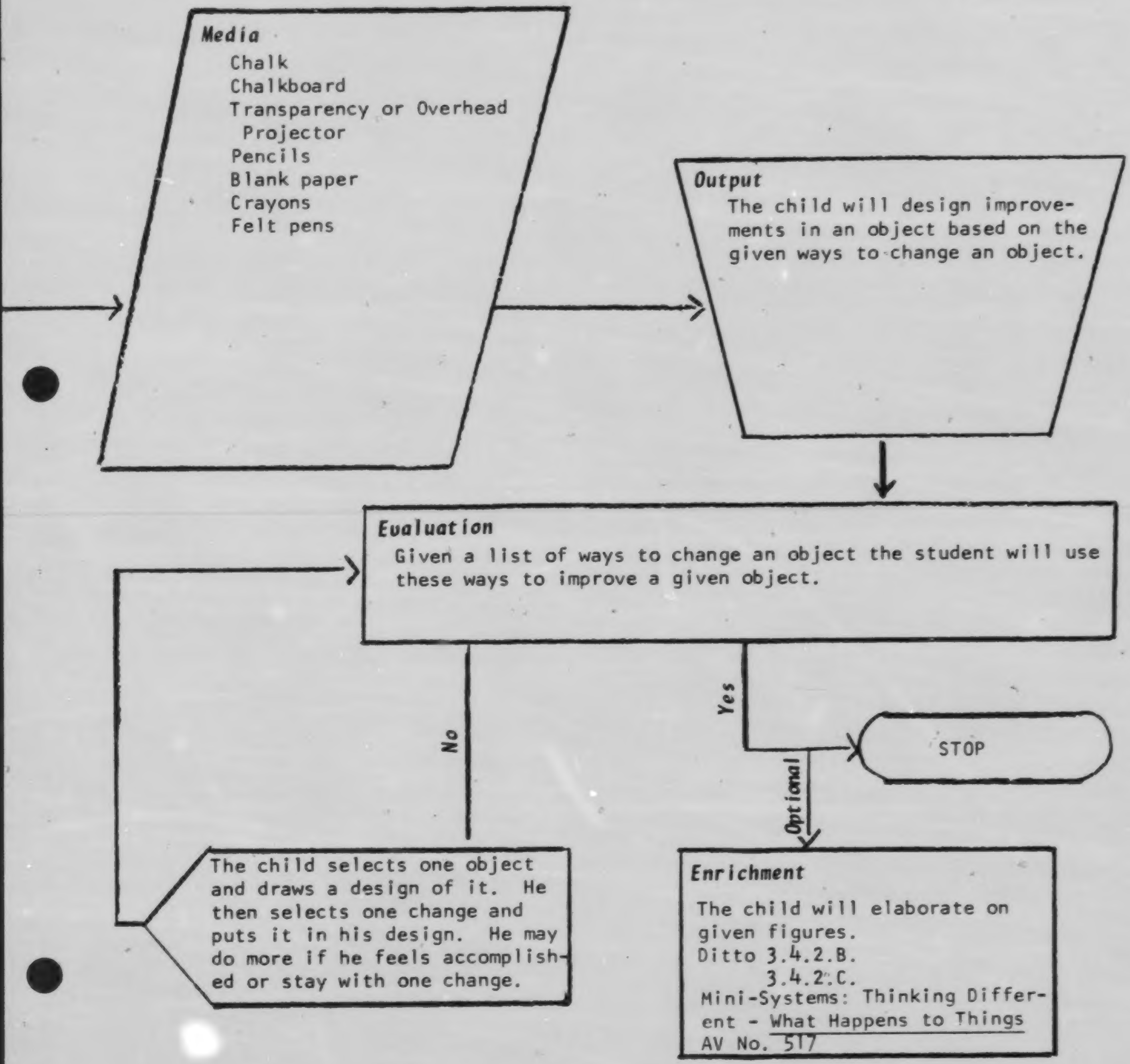
Discuss how specific objects have changed since they were invented (automobile, refrigerator etc.).

Learning Opportunities

I. Discuss all the changes that can take place within a given object. Brainstorm and list the possible ways to change an object. (See: 3.4.2.A.)
   A. The children should try to give examples of each way.

II. Brainstorm as a group an object (such as a can opener) and make each of the ten changes in it.

III. Have each child select a common object and change it in each of these ways.
   A. Each child will design the improvements made upon the object of his choice.



Media

- Chalk
- Chalkboard
- Transparency or Overhead Projector
- Pencils
- Blank paper
- Crayons
- Felt pens

Output

The child will design improvements in an object based on the given ways to change an object.

Evaluation

Given a list of ways to change an object the student will use these ways to improve a given object.

The child selects one object and draws a design of it. He then selects one change and puts it in his design. He may do more if he feels accomplished or stay with one change.

Enrichment

The child will elaborate on given figures.

Ditto 3.4.2.B.
3.4.2.C.

Mini-Systems: Thinking Different - What Happens to Things
AV No. 517

3.4.2.A

HOW TO MAKE CHANGES

1. MAGNIFY - make the object or parts of it larger.

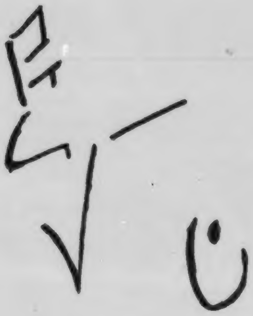
2. MINIFY - condense the object or its parts. (Examples: pocket radio, pens.)

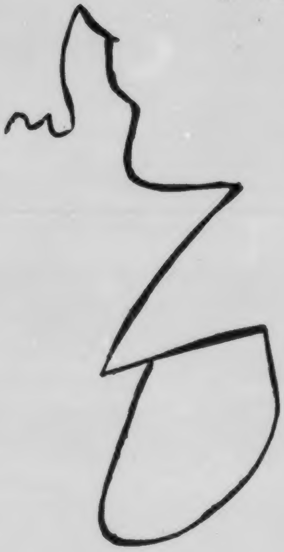
3. REARRANGE - take the parts of an object and put them in a different place. (Examples: freezer unit of a refrigerator, drip coffee pot.)

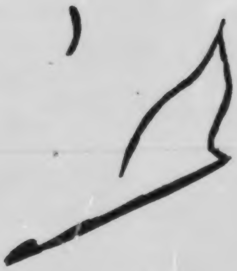
4. COMBINE - put together new objects with the object or its parts. (Examples: flashlight pen, can and bottle opener.)

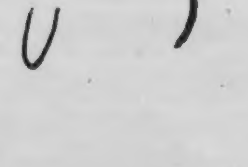
5. REVERSE - use an object or a part of it in an opposite way. (Examples: a vacuum can become a blower.)

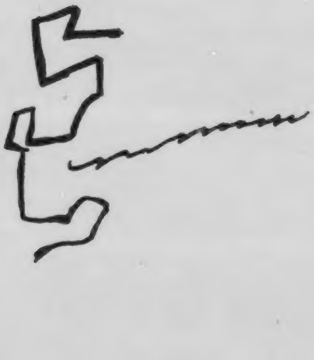
Complete these figures



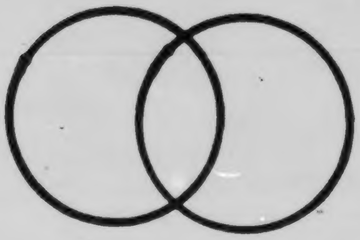








3.4.2.C



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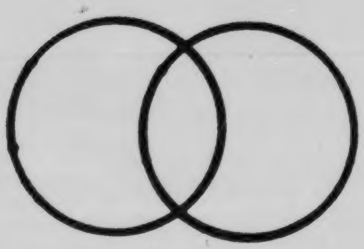

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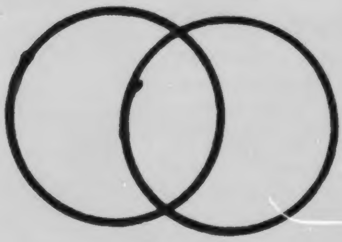

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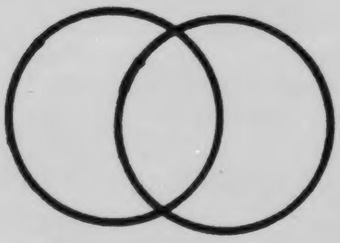

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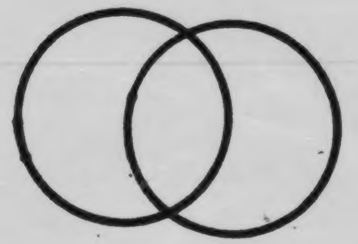

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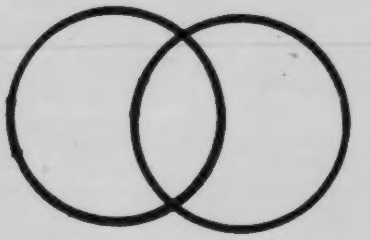

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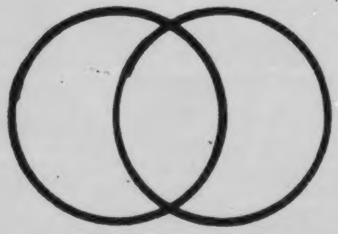

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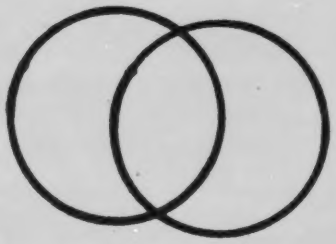

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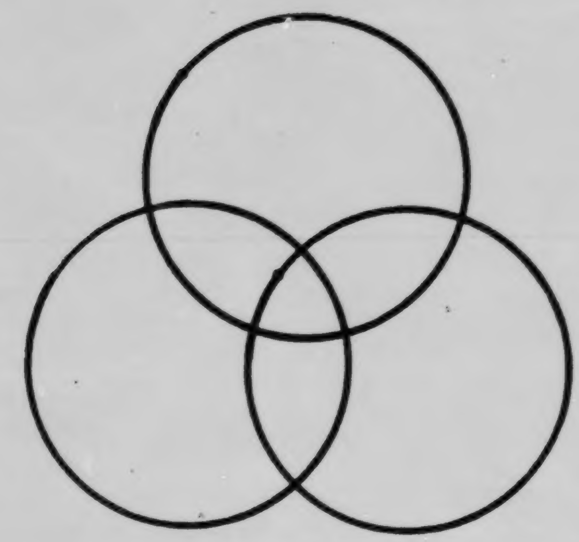
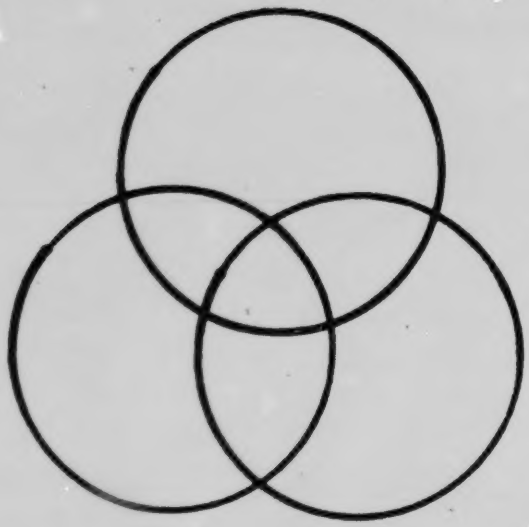
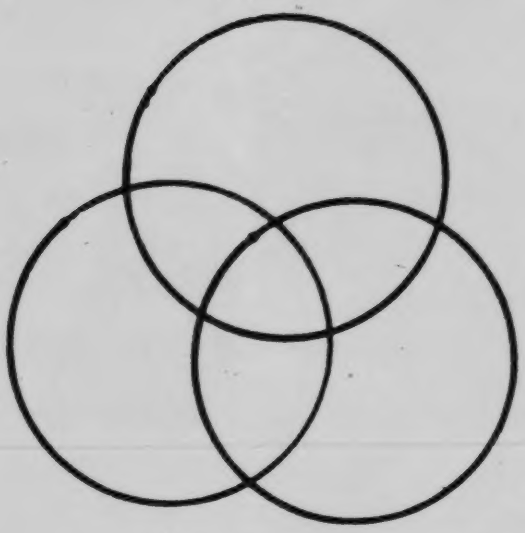
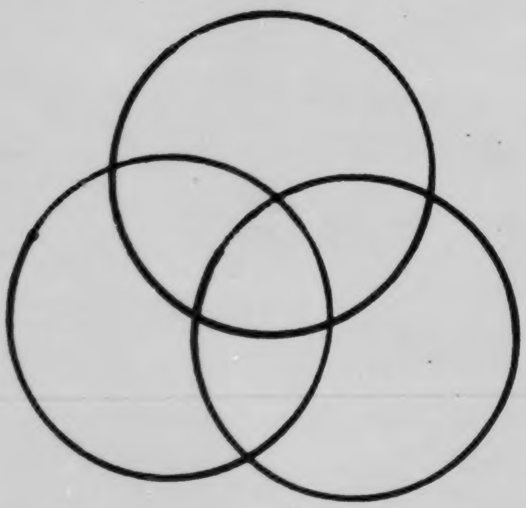
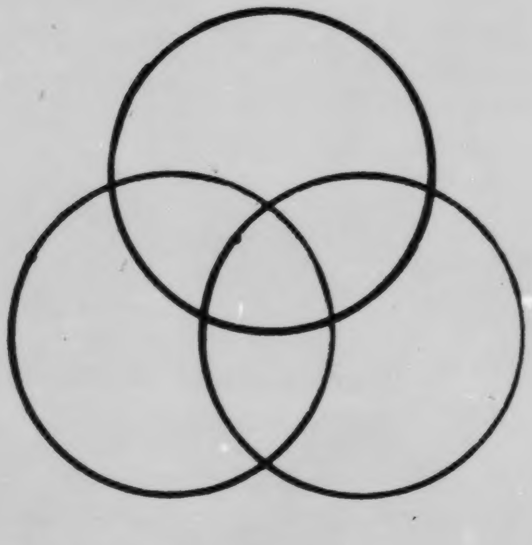
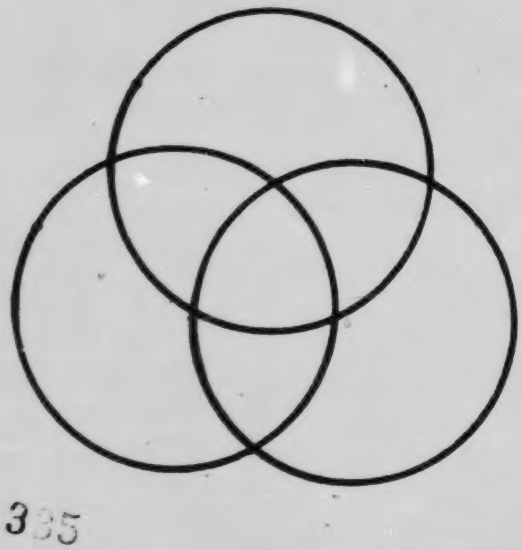




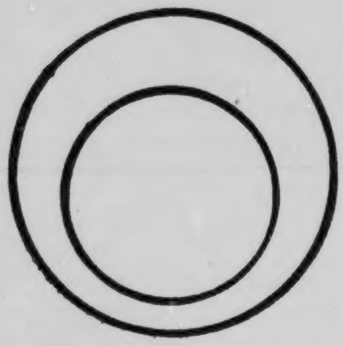








3.4.2.C.



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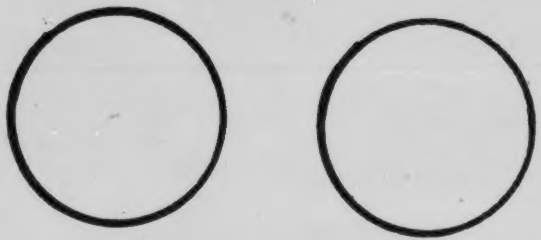

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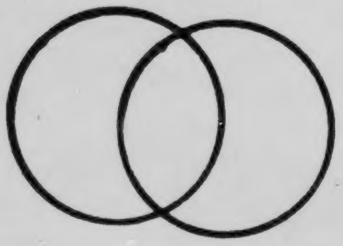

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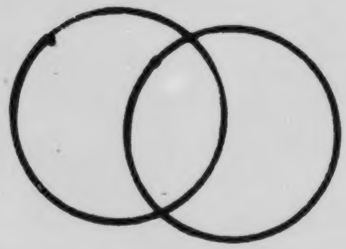

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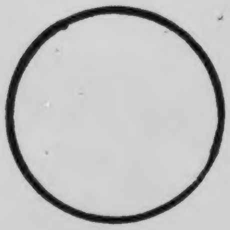

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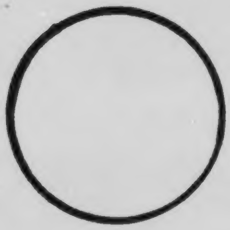
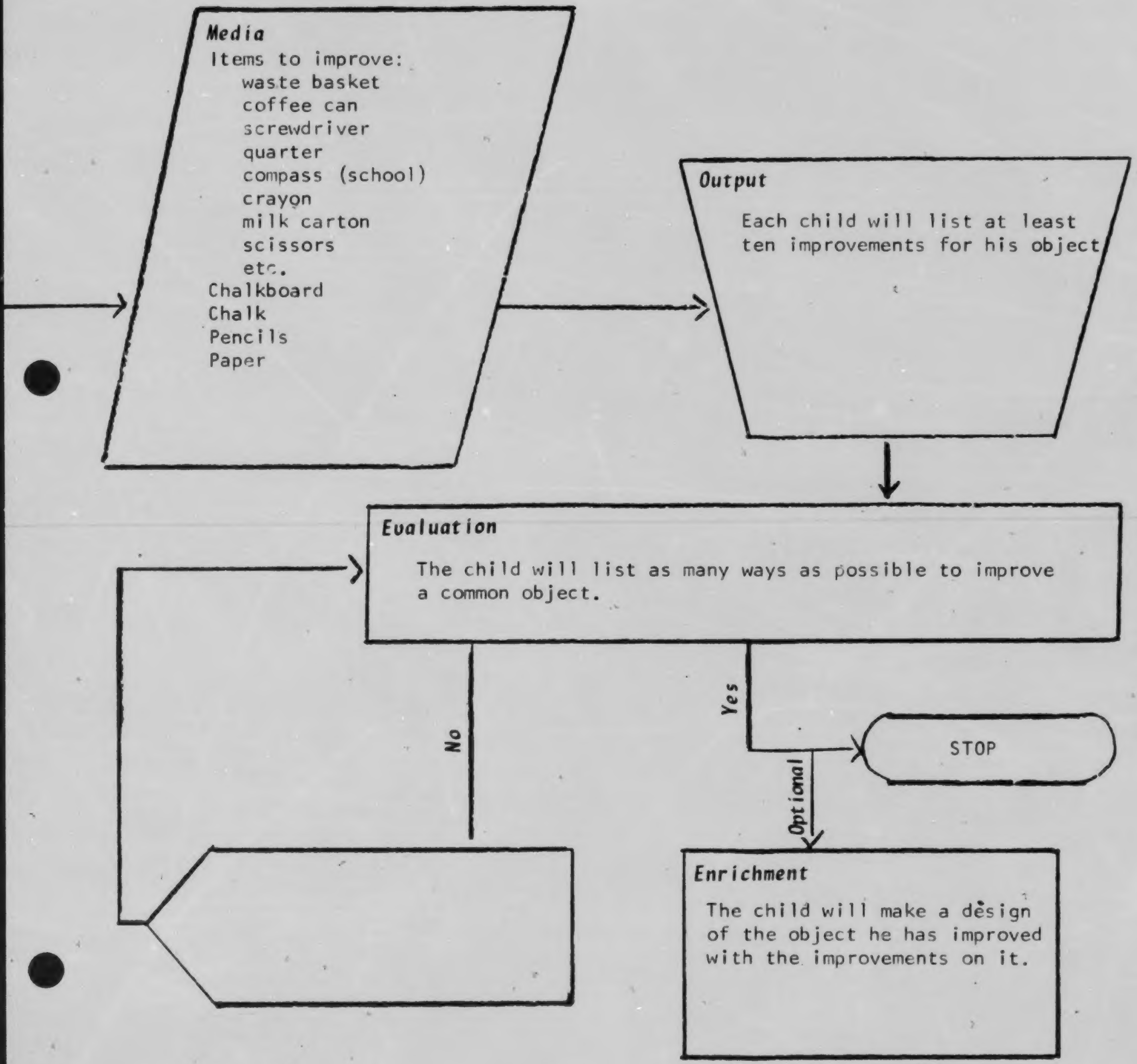


6.

What can you make from these circles?



Media

Items to improve:
  waste basket
  coffee can
  screwdriver
  quarter
  compass (school)
  crayon
  milk carton
  scissors
  etc.
Chalkboard
Chalk
Pencils
Paper

Output

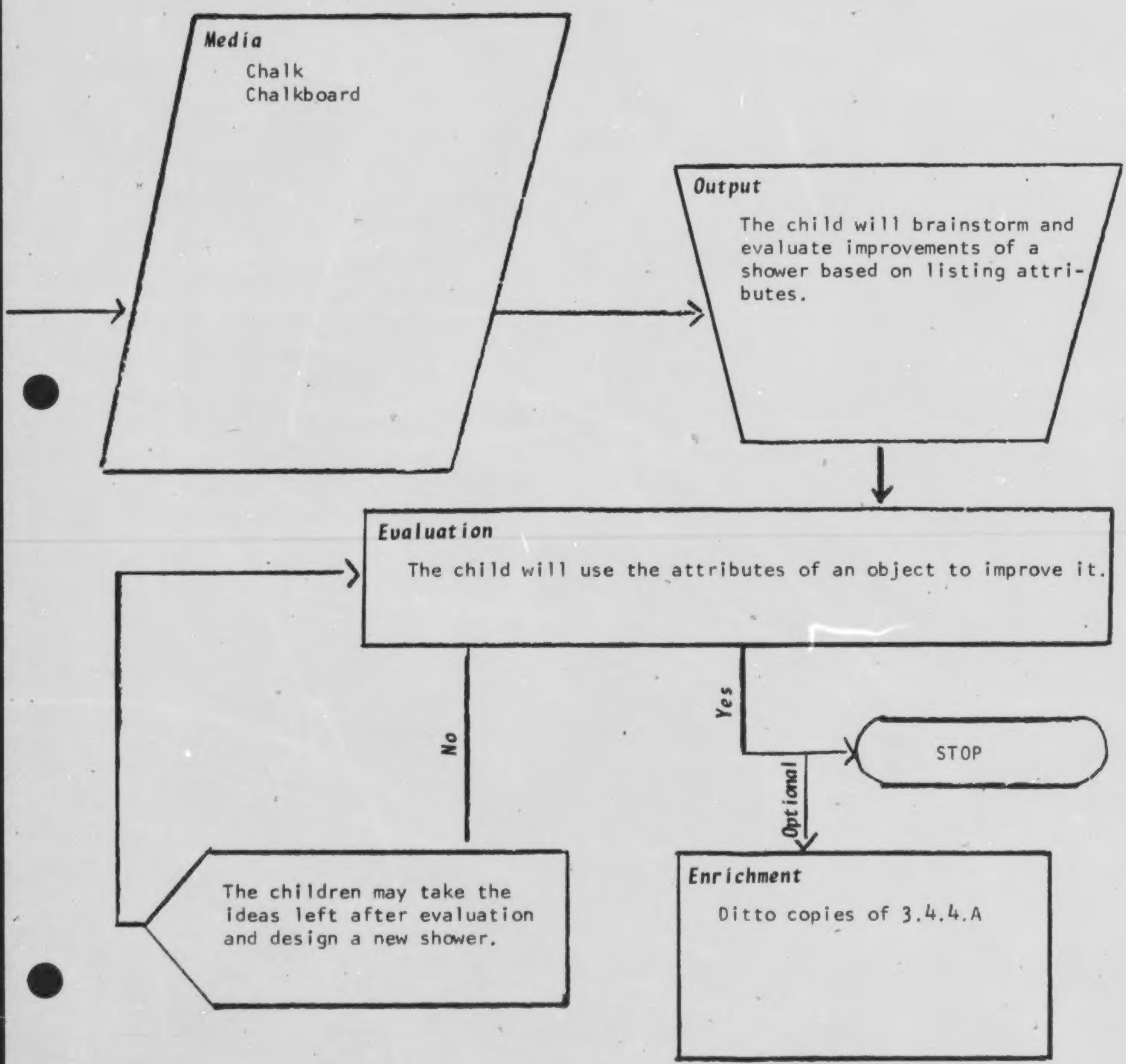
Each child will list at least ten improvements for his object.

Evaluation

The child will list as many ways as possible to improve a common object.

Enrichment

The child will make a design of the object he has improved with the improvements on it.



Media

Chalk
Chalkboard

Output

The child will brainstorm and evaluate improvements of a shower based on listing attributes.

Evaluation

The child will use the attributes of an object to improve it.

The children may take the ideas left after evaluation and design a new shower.

Enrichment

Ditto copies of 3.4.4.A

3.4.4.A

WHAT AN IMPROVEMENT ! ! ! !

Try to use your originality and flexibility in making some object better. Remember some of the things you can do to improve on what we have now.

Look at the attributes (characteristics) of the object and decide how you could change them.

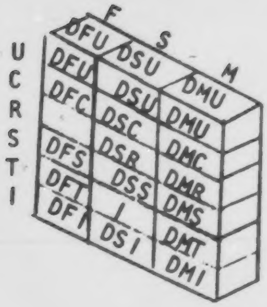
- MAGNIFY the objects or its parts.........make them bigger
- minify....... make the object or its parts smaller
- Add +++++++++ other things to the object
- Subtract ---- and substitute other materials, colors, designs
- Rearrange the parts of the object - put them in better places

NOW - select one object from below by placing your pencil in the middle of the circle and giving it one twist. Where your pencil lead points will determine your object.

SHOES

Automobile
Electric Lamp
Record Player
Dog Food
Bicycle
Telephone
Bed
YoYo
Textbook
Pen
Ice Cream Cone
Baseball Mitt
ADDRess Label
Coat or Jacket
Bathroom Scale

Next - brainstorm all improvements you can find
Then - design and label your improved objects.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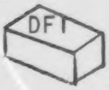
DMI

Concept Divergent Production

Curricular Objective

3.4.5 The student will elaborate on an idea developed from a single line.

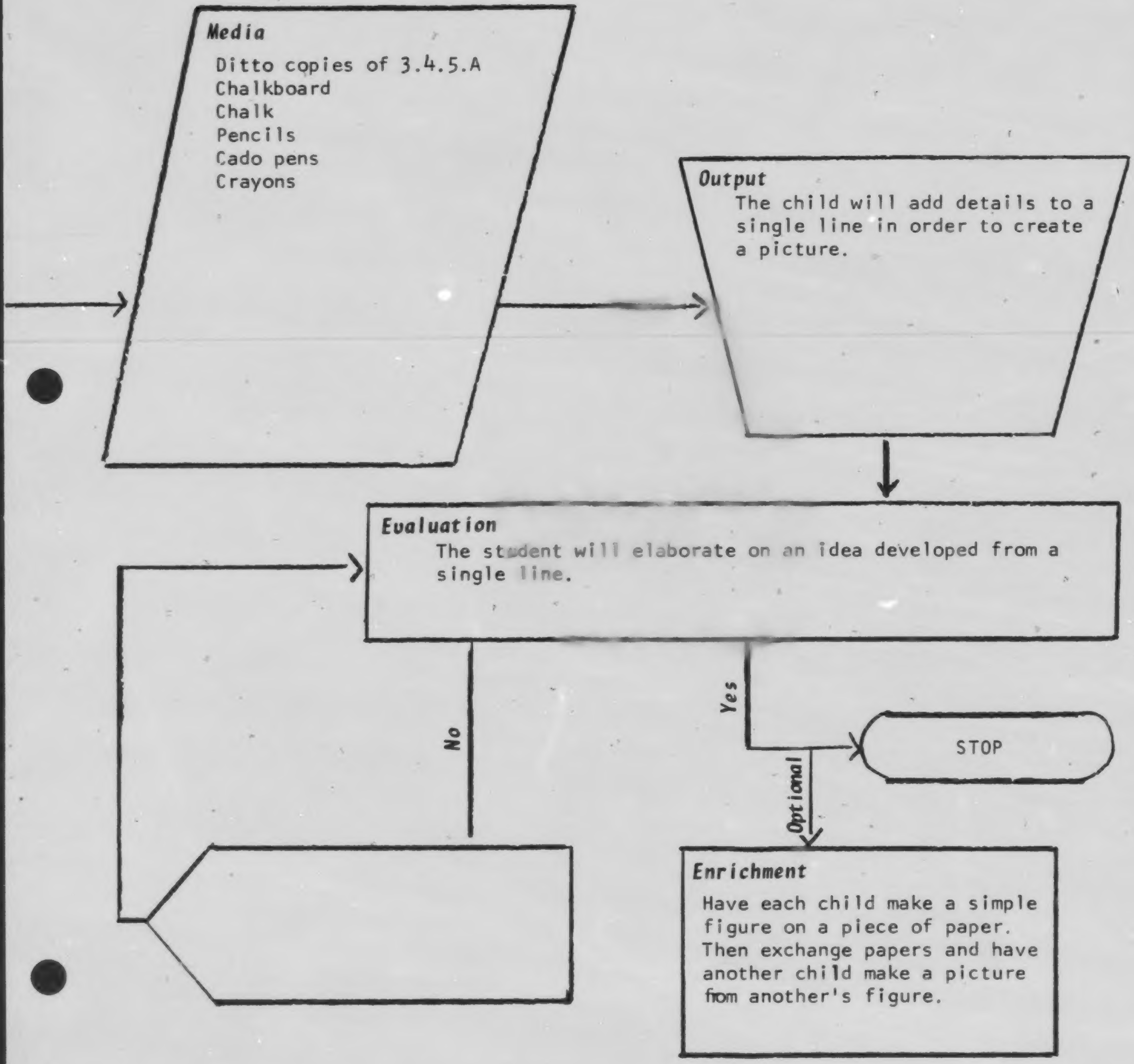


Input

Discuss how ideas can grow from a simple figure - such as a circle, triangle.

Learning Opportunities

- I. Put a large V on the board.
  - A. Ask each child to tell you what to add to it to make a picture.
  - B. Add the details as they are named.
  - C. Evaluate the result based on:
    - 1. How well the "drawing" represents an idea.
    - 2. How many details were added.
- II. Give each child a copy of 3.4.5.A
  - A. Each child can turn the paper in any direction he wishes to.
  - B. The child should then add as much detail as he can to make a complete picture.



Media

Ditto copies of 3.4.5.A
Chalkboard
Chalk
Pencils
Cado pens
Crayons

Output

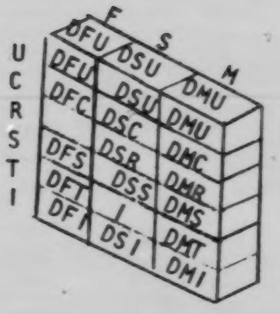
The child will add details to a single line in order to create a picture.

Evaluation

The student will elaborate on an idea developed from a single line.

Enrichment

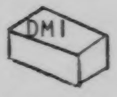
Have each child make a simple figure on a piece of paper. Then exchange papers and have another child make a picture from another's figure.



Concept Divergent Production

Curricular Objective

3.4.6 The student will generate at least five ideas about changes in a familiar story.



Input

Discuss old familiar stories - fairy tales.

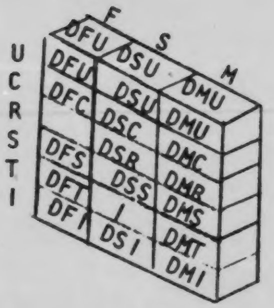
List all the stories the children say they remember.

Learning Opportunities

I. Ask the children if they ever thought about how things could change if they think about the implications of ideas.
   A. Discuss originality in people - the people who ask "What would happen if..." and then try it out.

II. Have the children think about one of the familiar fairy tales, "Jack in the Beanstalk."
   A. Follow the plan on 3.4.6.A

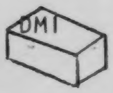
III. Discuss original changes in other fairy tales.
   A. Have each child select any tale he wants and make up five "what if" changes in the story.
   B. These may be presented to the class for a discussion of the changes.



Concept Divergent Production

Curricular Objective

3.4.7 Given a simple plot the children will brainstorm as a group to develop the story in detail.



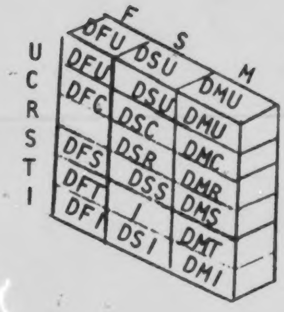
Input

Discuss elaboration with the children. This is the ability to add on to an idea or object.

Discuss the ability to add details and keep adding until the idea or object is complete.

Learning Opportunities

- I: Explain that you are going to tell a story and you want the children to elaborate on it.
  - A: Explain that you would like them to think of the actions and feelings of the characters.
  - B: Explain that they are not to get into what happened next in the story.
- II: Read or tell the story (See: 3.4.7.A)
  - A: Ask each question and have the children brainstorm all the possible answers to each question.
  - B: Keep track of how many alternative answers they can provide for each of the six questions.
- III: Evaluate at the end. (See: 3.4.7.A)

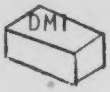


Recommended for Grade 6 only

Concept Divergent Production

Curricular Objective

3.4.8 The child will transform a familiar story into a newspaper article by elaborating on the original story.



Input

Discuss newspapers and how they are set up.

Discuss the terms: headlines, deck, dateline, and byline.

Discuss why the first paragraph of a news story covers the important part of the event.

Learning Opportunities

I. Discuss elaboration of an idea - the act of taking an idea and building on it.

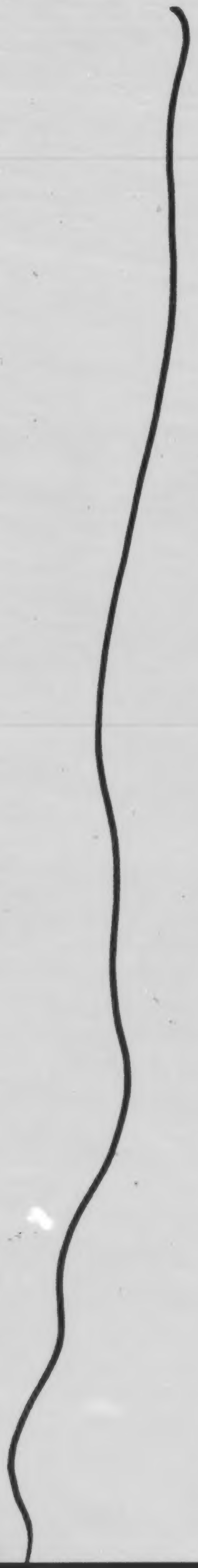
II. Discuss how stories from their early childhood elaborated on the ideas of magic, courage, or morals.

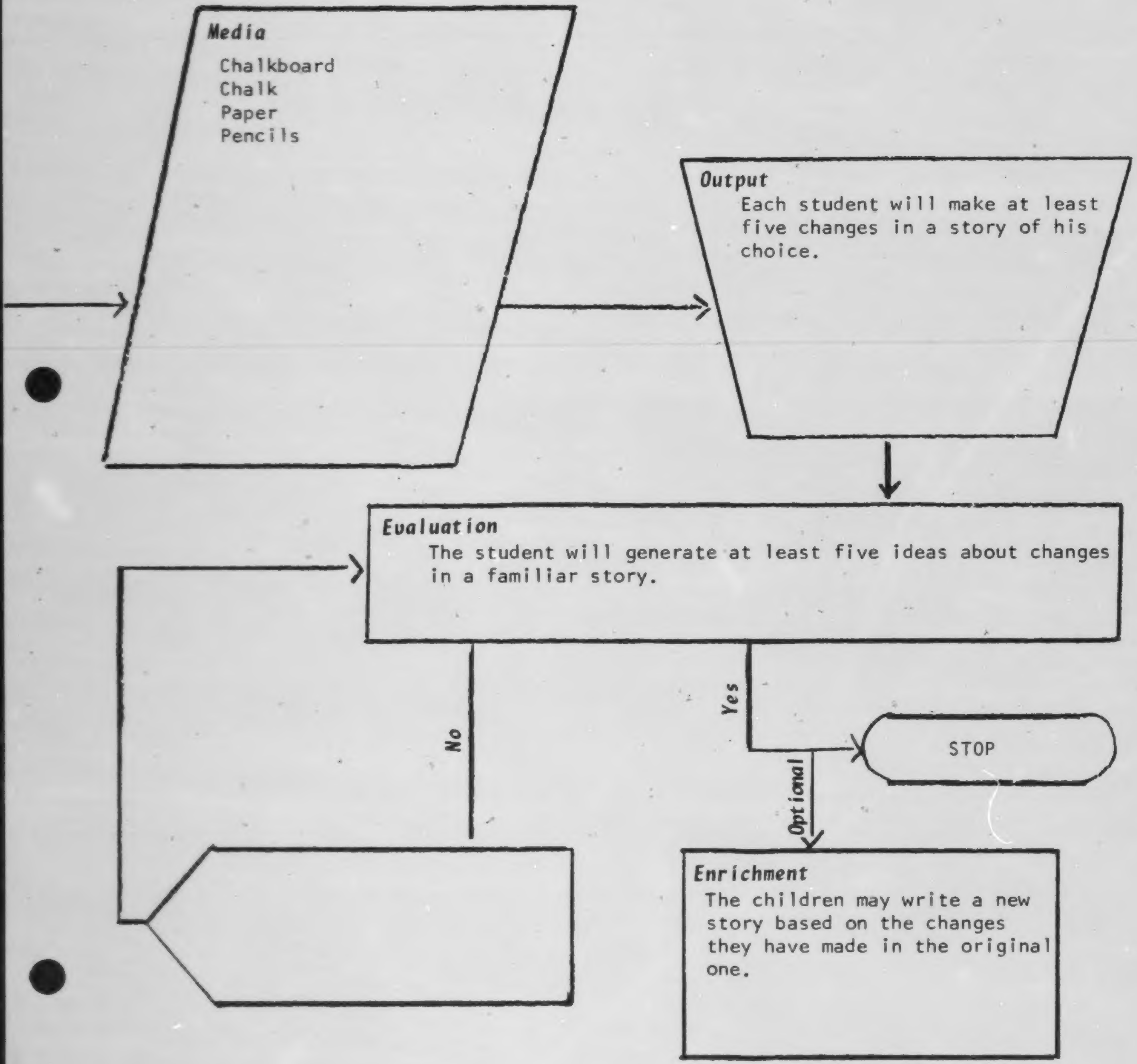
III. List together on the board old legends, stories, or fairy tales with which they are familiar.

IV. Ask how they would relate these stories to the articles they see in the newspaper.

V. Explain that these are samples of some fairy tales that have been written as news articles.
   A. Read aloud the fairy tale articles (See: 3.4.8.A)
   B. Discuss how the stories are set up according to a newspaper format.
   C. Discuss what parts of the stories are the basic story line and which parts are elaboration.

3.4.5.A





Media

Chalkboard
Chalk
Paper
Pencils

Output

Each student will make at least five changes in a story of his choice.

Evaluation

The student will generate at least five ideas about changes in a familiar story.

Enrichment

The children may write a new story based on the changes they have made in the original one.

JACK AND THE BEANSTALK

Preparation
Story: Jack and the Beanstalk
Pencils and Paper

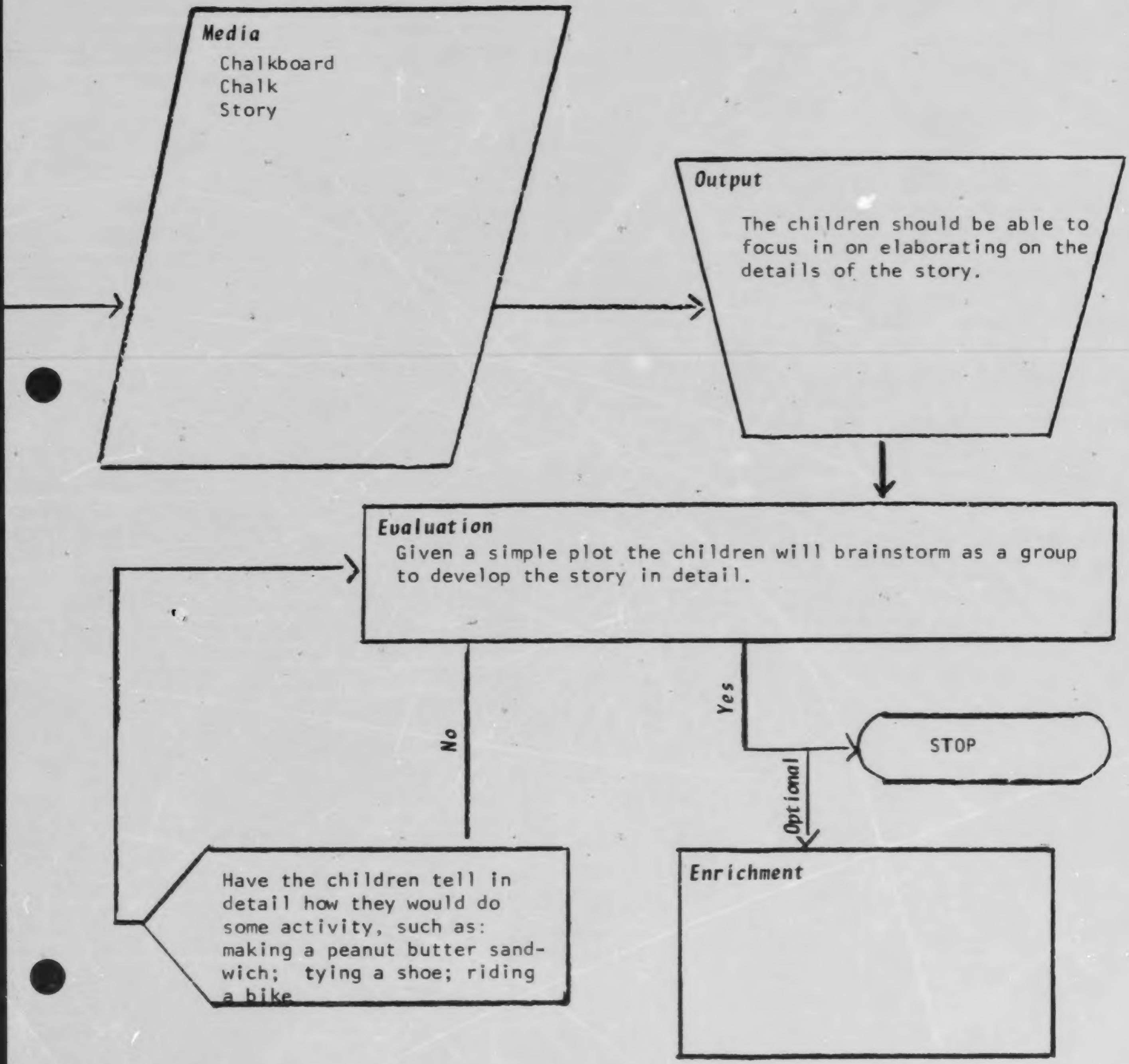
Activity

Read the children Jack and the Beanstalk.
Discuss the story with them.
(Teacher might also want to use some creative dramatics.)

Ask the children to imagine the following:

1. What if Jack was not a boy but a girl called "Jackie?" Discuss.
2. What if the giant wasn't a giant but a midget - how would this have changed the outcome of the story? Discuss.
3. What if the harp was a piano instead? Discuss.
4. What if Jack's mother would have cooked the beans instead of throwing them out the window. Discuss.
5. What if the hen didn't lay golden eggs? Discuss.

Write a list of things that would happen if -- from each of the five categories. Allow 10-15 minutes for writing.



Media

Chalkboard
Chalk
Story

Output

The children should be able to focus in on elaborating on the details of the story.

Evaluation

Given a simple plot the children will brainstorm as a group to develop the story in detail.

Have the children tell in detail how they would do some activity, such as: making a peanut butter sandwich; tying a shoe; riding a bike

Enrichment

STORY FOR ELABORATION

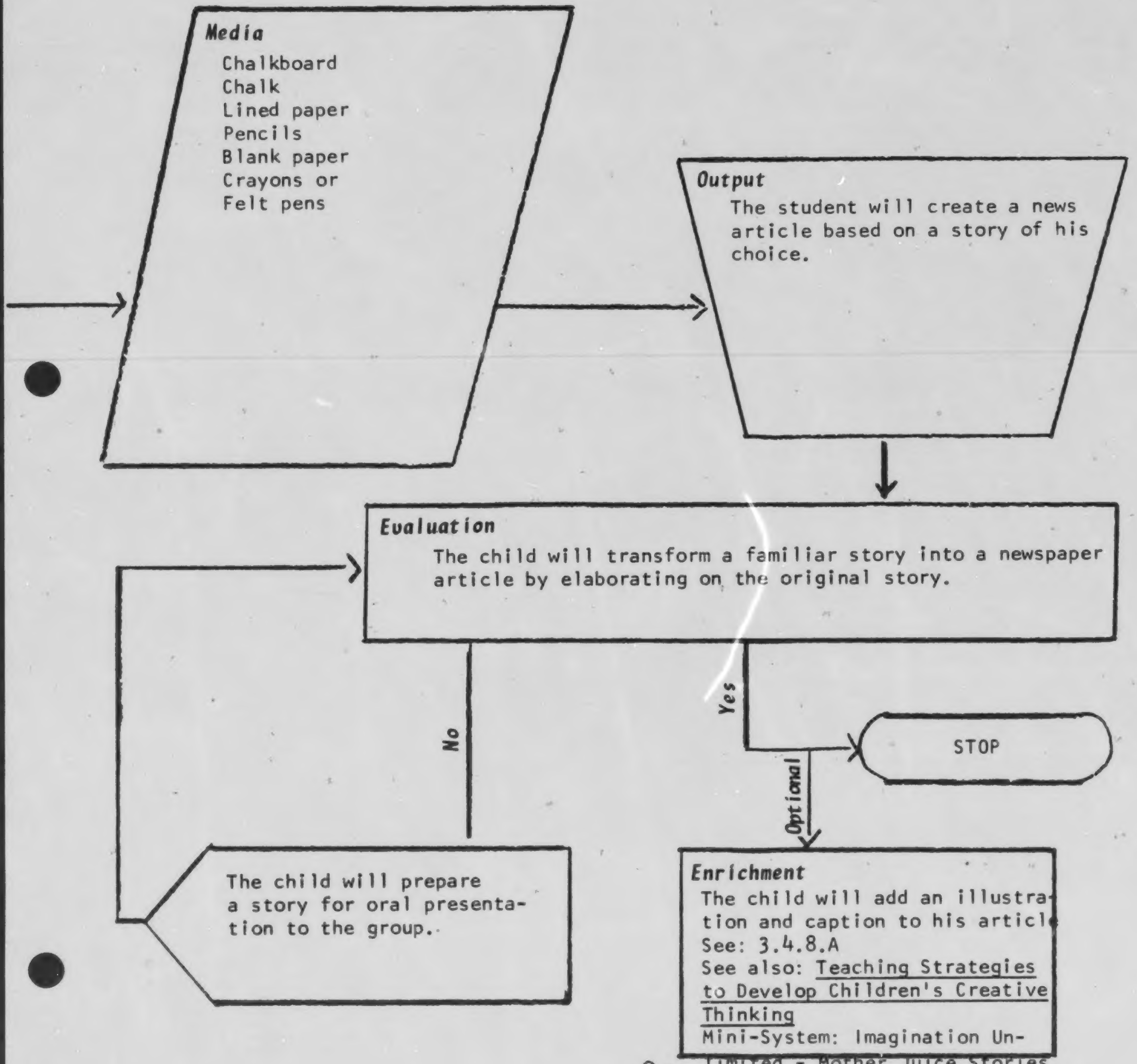
The story: A father took his ten year old son out on his boat to do some deep sea fishing. As the boy was leaning over to put a net under a fish his father had caught, he fell overboard.

Questions to brainstorm orally--think of as many ideas as possible.

1. What did the boy do?
2. What was he thinking?
3. How did he feel?
4. What was his father doing in the meantime?
5. What were his feelings?
6. What thoughts were going through his head?

Evaluation discussion:

1. Which questions did we generate the most ideas on? Why do you think this happened?
2. Did the lack of details in the story bother you?
3. Why do you think the details were left out?
4. Did you want to get on with the action and tell what would happen next?
5. Why didn't we go on developing story itself?



Media

Chalkboard
Chalk
Lined paper
Pencils
Blank paper
Crayons or
Felt pens

Output

The student will create a news article based on a story of his choice.

Evaluation

The child will transform a familiar story into a newspaper article by elaborating on the original story.

The child will prepare a story for oral presentation to the group.

Enrichment

The child will add an illustration and caption to his article
See: 3.4.8.A
See also: Teaching Strategies to Develop Children's Creative Thinking
Mini-System: Imagination Unlimited - Mother Juice Stories
AV No. 545

Girl, Lamb Invade School; 'Made Children Laugh, Play'

BY IRVING CLIFFORD
Times Staff Writer

Classes were suspended for the third day this week at George Washington Elementary School in Manhattan following a student demonstration led by a girl identified only as "Mary."

Students later told reporters that she was accompanied by a lamb that had "fleece as white as snow."

"Everywhere that Mary went, the lamb was sure to go," said Miles Standish, principal of the school. "It made the children laugh and play to see a lamb in school," he explained.

According to Standish, officials closed the school because they felt the disruption might get out of hand and result in serious injuries to teachers and other staff members. Mary was a student in the school, he said, but the lamb was "clearly an outside troublemaker who had no business in the classroom."

In a press conference immediately after the disturbance, Standish an-

Continued on Page 5, Col. 2

RADICAL LAMB—Security cameras at George Washington High School snapped this shot of one of the rebel leaders of a demonstration.

Ridinghood Girl Saved by Hunter

American Lieutenant Shoots Hungry Wolf

BONN (Germany), December 15—An American hunter saved the life of a young girl today in the Black Forest. He shot a wolf that had eaten her grandmother and was about to eat the little girl.

The girl, "Little Red" Ridinghood, 13, was taken to a hospital in the city of Bonn. Doctors say that Ridinghood will be able to go home after a few days rest.

"When I came in, the wolf had backed the little girl into a corner and was about to jump on her," said Lieutenant Rusty, a 31-year-old American soldier living in Germany. "I raised my rifle and let him have it. He'll never bother little girls again."

Rusty said he was hunting in the Black Forest when he heard the girl's screams and ran to the cabin.

Doctors say that Ridinghood was

Continued on Page 33, Col. 2

Fiction From Fact

Because newspaper stories touch on so many kinds of human predicaments and dramatic moments, they often serve to inspire works of fiction—short stories, novels, plays and even poetry.

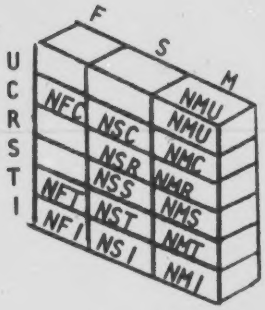
Unlike a reporter, the literary artist has the freedom to go beyond the original story by embellishing the action, selecting and elaborating on certain details, attributing motives or feelings to the principals and extending the story backward or forward in time.

Your students can try the same kind of fictional transformation. Select one unusual true story from the newspaper and, with the whole class taking part, begin to develop it into a piece of fiction. Once the students grasp the idea, set them to work individually, but all working on the same story. It will be interesting to see how many variations are created from a single factual stimulus.

Eventually, the students can make their own selections of stories to convert into fiction, drama or poetry.

A variation, useful especially with younger students, is to use newspaper stories as stimuli for improvisations. For instance, imagine a story that tells about a husband and wife rushing by automobile to meet each other and crashing at an intersection. (This story actually appeared in a local newspaper.) Imagine the fun kids would have improvising the dialogue that would ensue between the husband and wife at the scene of the wreck.

As a turnabout, students can create newspaper stories from fiction (or even from historical stories).



Concept Convergent Production

Curricular Objective

4.1 The child will be able to form words from letters given orally by other students and placed on a grid.

Input

Discuss the purpose of a "grid."

Discuss how they are used.

Discuss how else they might be used.

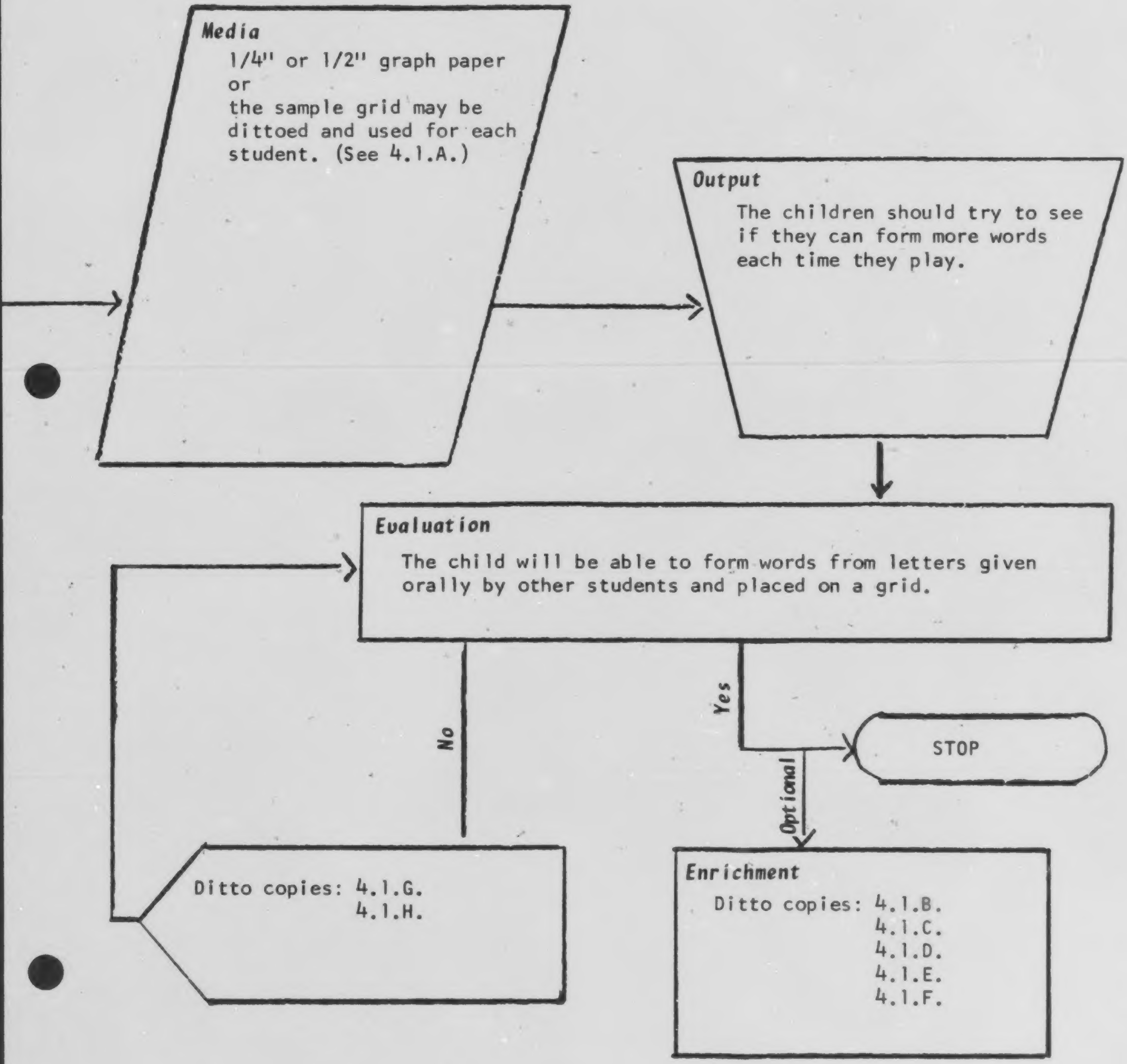
Learning Opportunities

I. Give each child a 5 square x 5 square piece of graph paper or 4.1.A.

II. Explain that the object of the game is to spell as many words as possible either vertically, horizontally, or diagonally.

III. One child starts the game by calling out one letter of the alphabet.
   A. Each child places the letter somewhere on the grid.
   B. The next student calls out another letter and it is placed on each child's grid.
   C. This process continues until 25 letters have been called out.
      1. The children may repeat letters when calling them out.

IV. The child with the most words is judged the winner.



Media

1/4" or 1/2" graph paper
or
the sample grid may be dittoed and used for each student. (See 4.1.A.)

Output

The children should try to see if they can form more words each time they play.

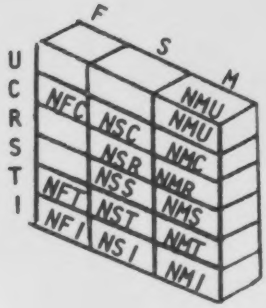
Evaluation

The child will be able to form words from letters given orally by other students and placed on a grid.

Ditto copies: 4.1.G.
4.1.H.

Enrichment

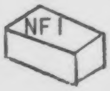
Ditto copies: 4.1.B.
4.1.C.
4.1.D.
4.1.E.
4.1.F.



Concept Convergent Production

Curricular Objective

4.2 The student will use a grid to complete two pictures.



Input

Show the children a piece of graph paper and review the way a grid is used.

Discuss how businesses use a grid to determine if profits are up or down.

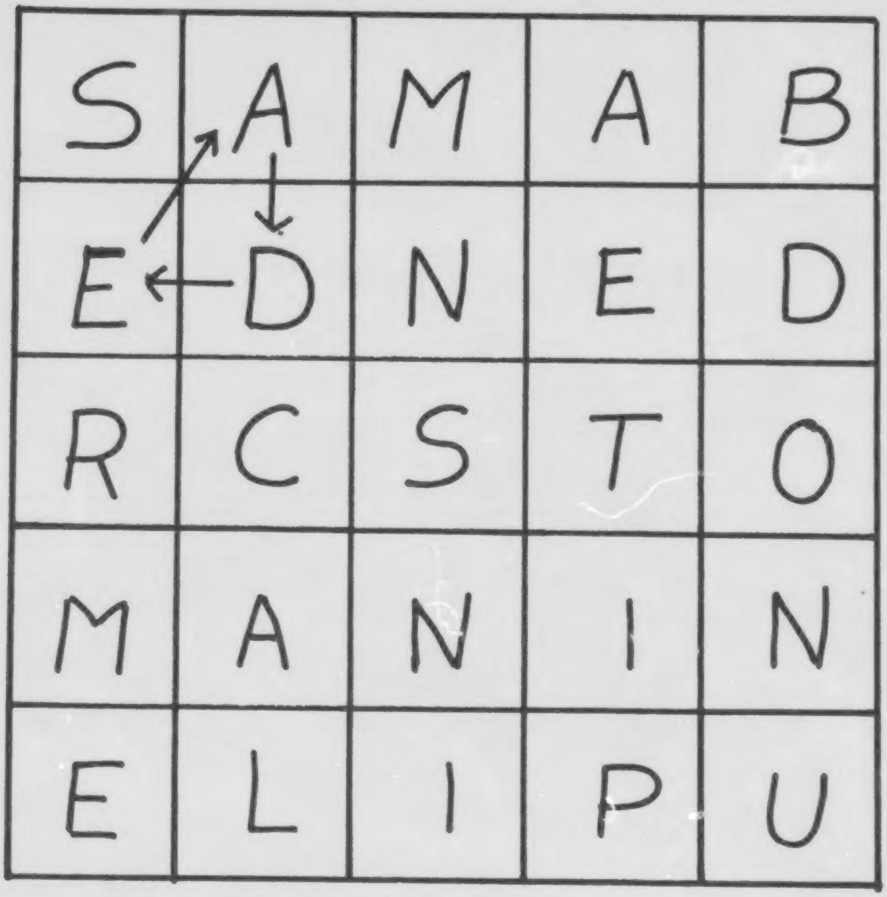
Learning Opportunities

I. Show a grid on the overhead projector. (See: 4.2.A.)
   A. Explain the horizontal axis and how each line is numbered along that axis.
      1. Number the lines with the children.
   B. Show them the vertical axis and how each line is numbered.
      1. Number each line along the vertical axis.
   C. Discuss coordinates and how to locate a point using them.

II. Distribute ditto copies of 4.2.A. and have the children complete the pictures.

4.1.B.

Find all possible words within the squares of this puzzle. They may move up, down, sideways, or diagonally. The same letter square may be used twice in the same word if another letter is used in between. In the example below, the letter "D" is used twice in the word "dead", but "E" and "A" are used between.



S	A	M	A	B
E	D	N	E	D
R	C	S	T	O
M	A	N	I	N
E	L	I	P	U

Move from square to square - either up or down, or from side to side (not diagonally) to find the hidden sentence in each diagram.

Example:

1. Start with S

O	T	S
O	E	U
K	I	T

2. Start with I

M	R	D	E
A	O	F	K
R	A	I	O
T	H	L	O

3. Start with W

W	O	E	T	W
S	H	P	A	E
E	H	O	P	C
G	T	U	D	O
N	I	R	N	R

4.1.E.

WORD YO-YO

1. FARM	2. HOPE	3. LIFE	4. RACE
______	______	______	______
______	______	______	______
______	______	______	______
______	______	______	______
______	______	______	______
______	______	______	______
______	______	______	______
FARM	HOPE	LIFE	RACE

5. GOOD	6. TELL	7. TAKE	8. COST
______	______	______	______
______	______	______	______
______	______	______	______
______	______	______	______
______	______	______	______
______	______	______	______
______	______	______	______
GOOD	TELL	TAKE	COST

In each successive step, remove one letter from the key word, "LANE," and substitute a new letter. The new word formed must be a real word. At the fifth step (arrow), none of the letters from the key word, "LANE" remain. Beyond this point (below the arrow), each successive step returns one letter, until at step 9 the key word is complete once more. No new word may be repeated.

LANE
LONE
LOSE
LOST
COST
CAST
CASE
CANE
LANE

4.1.F.

DIRECTIONS: Each example contains two words. The letters of each word are in proper order, but they are interspersed with letters of the other word. The object is to cross out the letters for one word so the remaining letters will spell the second word.

1. Remove the bird, and leave its home: GNUELLST __________ __________
2. Remove the state, and leave its capital: SOARLEEGMON __________ __________
3. Remove the pig and leave the sty: PEBONAR __________ __________
4. Remove the kitten and leave the cat: CLUIBON __________ __________
5. Remove the spoon and leave the plate: PLADLATLETER __________ __________
6. Remove the boat and leave the water: SOCHIPEAN __________ __________
7. Remove the flower and leave the garden: BERODSE __________ __________
8. Remove the fruit and leave the vegetable: PAPEPLEA __________ __________
9. Remove the circle and leave the square: SCUPHEBERE __________ __________
10. Remove the sand and leave the box: CABERACTHON __________ __________

NOW TRY TO MAKE SOME ON YOUR OWN:

TWO DOWN, TWO TO GO

Below are listed the initial and final letters of some four-letter words. List as many words as possible that begin and end with the given letters.

1. L _ _ P

____

____

____

2. N _ _ E

____

____

____

3. R _ _ G

____

____

____

4. P _ _ L

____

____

____

5. M _ _ T

____

____

____

6. C _ _ N

____

____

____

7. F _ _ D

____

____

____

8. D _ _ E

____

____

____

9. B _ _ N

____

____

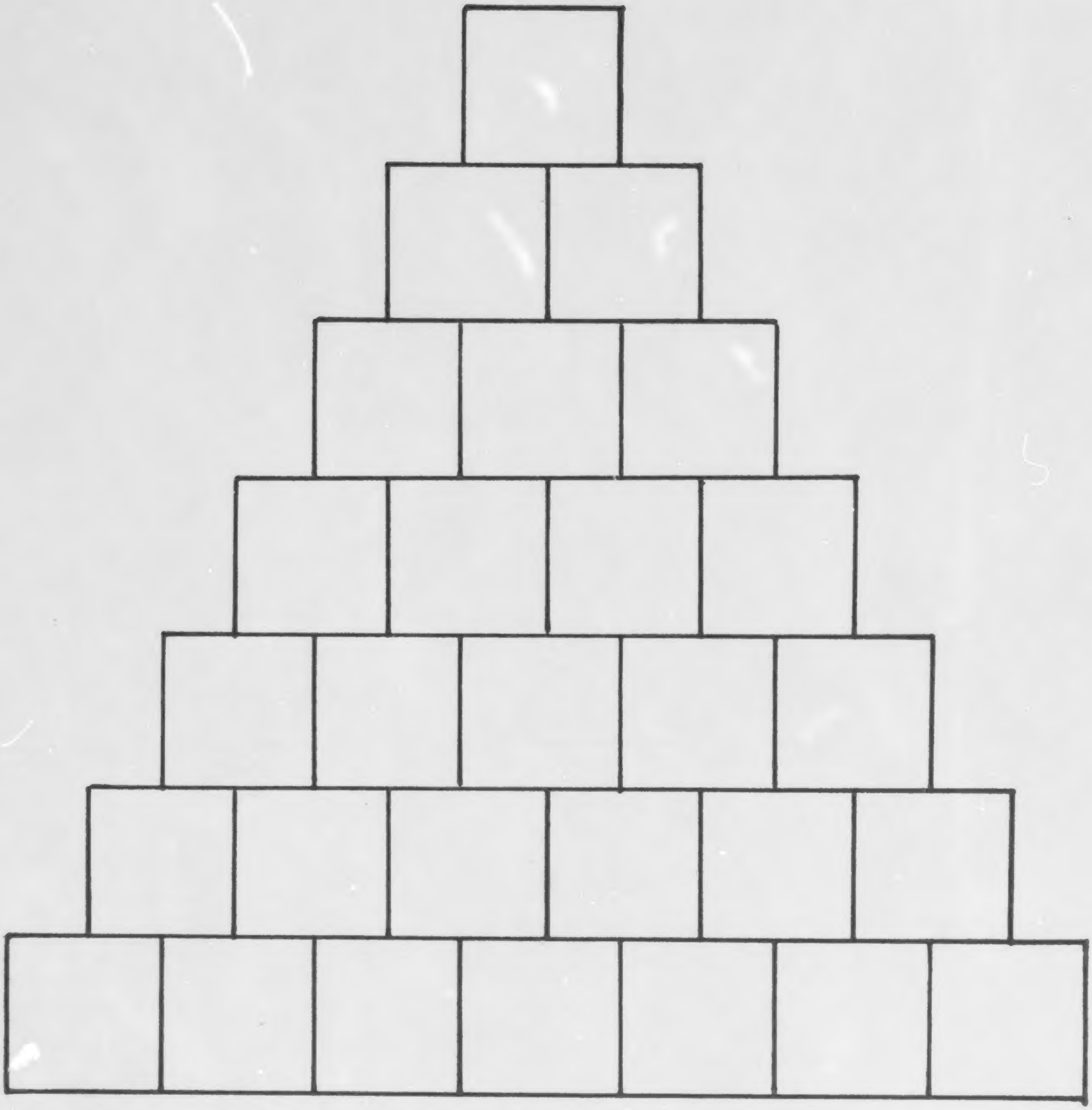
____

10. G _ _ N

____

____

____



T, M, S, S, M, A, E, R

THIS PYRAMID PUZZLE IS DONE BY USING ONE OF THE SEVEN LETTERS LISTED ON THE BOARD TO FORM A ONE-LETTER WORD IN THE TOP SQUARE. IN THE SECOND ROW, FORM A TWO-LETTER WORD USING THE LETTER IN THE TOP SQUARE, PLUS ONE ADDITIONAL LETTER. IN THE THIRD ROW FORM A THREE-LETTER WORD USING THE TWO LETTERS IN ROW 2, PLUS ONE MORE LETTER. CONTINUE IN THIS WAY UNTIL ALL SEVEN ROWS ARE COMPLETE.

ANSWER SHEET

4.1.D.

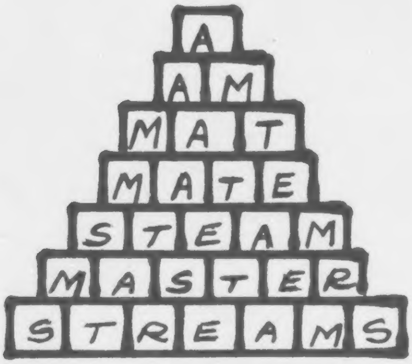
1. Sue took it.
2. I looked for Martha.
3. We ate popcorn during the show.

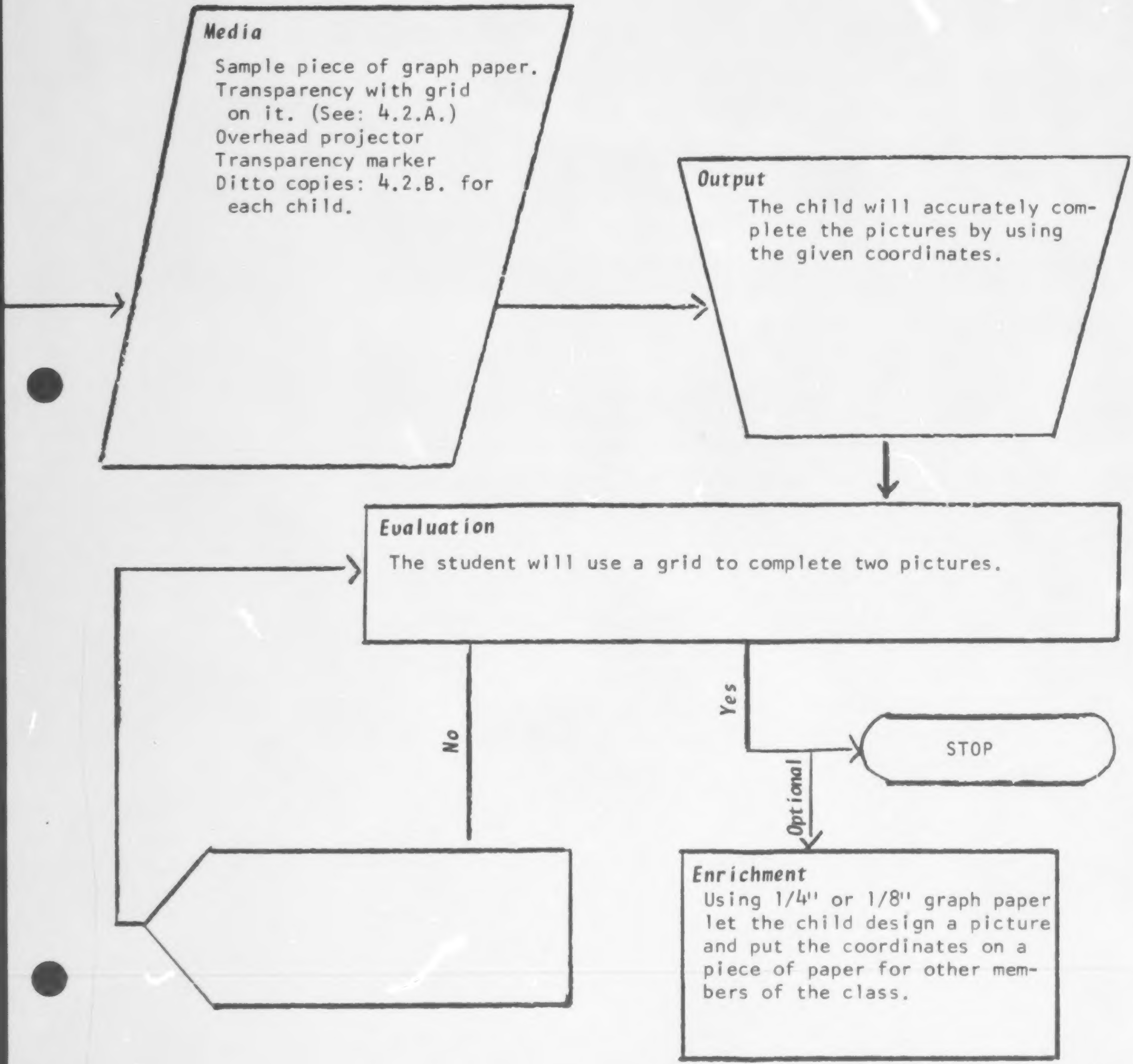
4.1.F.

Gull........Nest
Oregon......Salem
Pen.........Boar
Cub.........Lion
Ladle.......Platter
Ship........Ocean
Rose........Bed
Apple.......Pea
Sphere......Cube
Beach.......Carton

4.1.H.

Solution: There are other possible solutions.


A
AM
MAT
MATE
STEAM
MASTER
STREAMS



Media

Sample piece of graph paper.
Transparency with grid on it. (See: 4.2.A.)
Overhead projector
Transparency marker
Ditto copies: 4.2.B. for each child.

Output

The child will accurately complete the pictures by using the given coordinates.

Evaluation

The student will use a grid to complete two pictures.

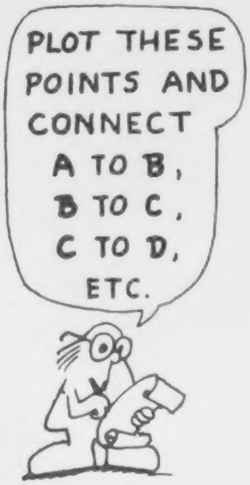
Enrichment

Using 1/4" or 1/8" graph paper let the child design a picture and put the coordinates on a piece of paper for other members of the class.

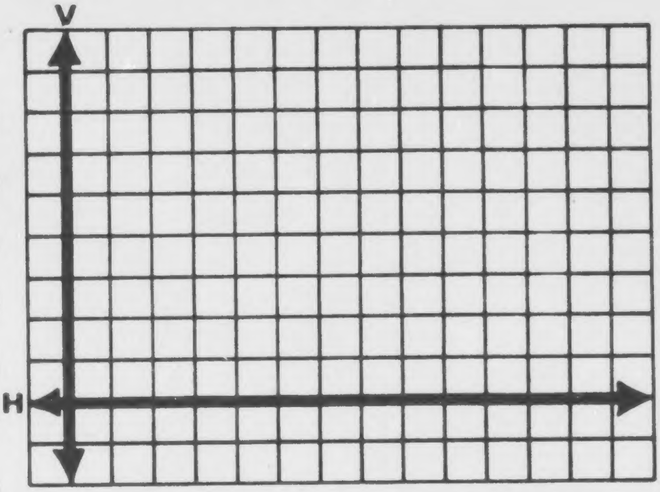
4.2.A.

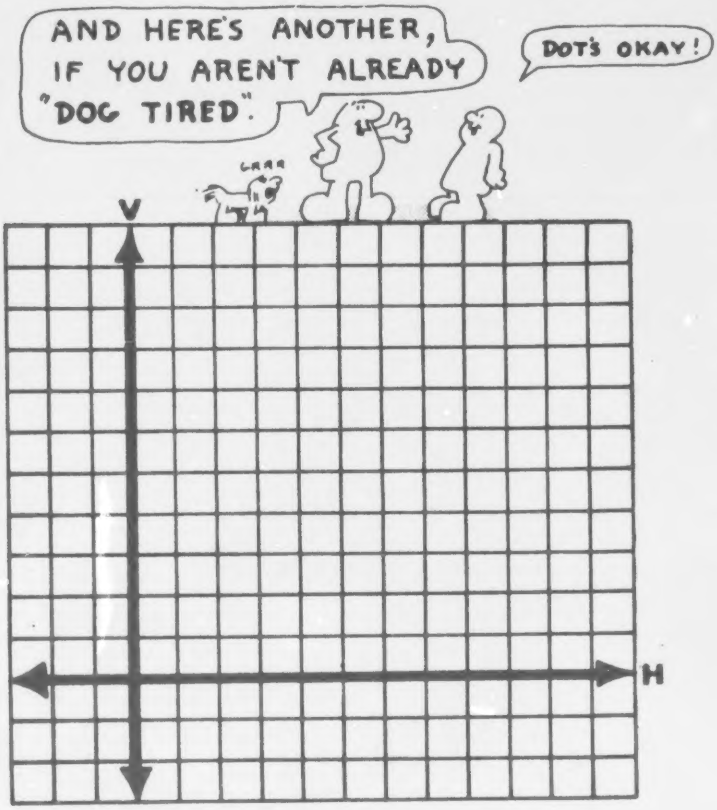
PLOTTING POINTS

DO YOU REMEMBER HOW TO PLOT POINTS ON A GRID?

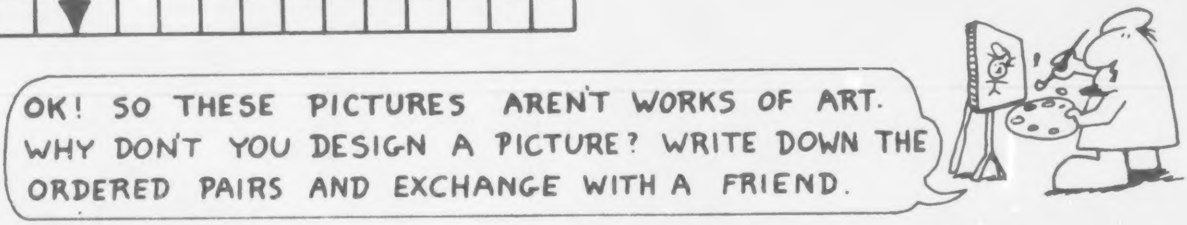

PLOT THESE POINTS AND CONNECT A TO B, B TO C, C TO D, ETC.

	(H, V)		(H, V)
A	(1, 3)	G	(7, 4)
B	(2, 3)	H	(9, 4)
C	(2, 4)	I	(9, 3)
D	(5, 4)	J	(13, 3)
E	(5, 6)	K	(11, 1)
F	(7, 6)	L	(2, 1)
		M	(1, 3)




AND HERE'S ANOTHER, IF YOU AREN'T ALREADY "DOG TIRED".
DOT'S OKAY!
GRRR
V
H

	(H, V)		(H, V)
A	(1, 2)	K	(7, 4)
B	(3, 2)	L	(5, 4)
C	(3, 0)	M	(3, 7)
D	(4, 0)	N	(3, 5)
E	(4, 2)	O	(2, 5)
F	(7, 2)	P	(2, 4)
G	(7, 0)	Q	(0, 4)
H	(8, 0)	R	(0, 3)
I	(8, 5)	S	(2, 3)
J	(7, 5)	T	(1, 2)


OK! SO THESE PICTURES AREN'T WORKS OF ART. WHY DON'T YOU DESIGN A PICTURE? WRITE DOWN THE ORDERED PAIRS AND EXCHANGE WITH A FRIEND.

From Pic-A-Puzzle, Reuben Shadler. Creative Publications, 1970.

4.1.A.

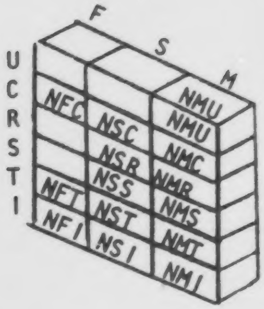
4.1.C.

B	M	W	C	H
U	T	A	O	D
S	L	S	R	G
H	E	E	P	I

Use each letter only once.

There are fifteen DOMESTICATED ANIMALS in this Word Maze.

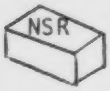
1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________
11. ____________________
12. ____________________
13. ____________________
14. ____________________
15. ____________________



Concept Convergent Production

Curricular Objective

4.3 The child will determine the difference between codes and ciphers by using cryptography.



Input

Discuss secret messages and why they have been used for many years.

Discuss any secret messages the children have written.

Ask them if they know the name for putting messages into secret form. (Cryptography)

Learning Opportunities

I. Discuss and list the cyptogram systems the children have heard of or used.
   A. Discuss what codes really are and why code books are necessary. (See: World Book, Vol. 4)
   B. Discuss cipher systems and determine who uses those. (See: World Book, Vol. 4)

II. Have the children try a simple cipher. (See: 4.3.A.)

III. Let the children try applying the deciphering system to ditto copies of 4.3.B.

IV. Distribute and discuss ditto copies of 4.3.C.

FUTURE MATH

In the following problems a (+) sign means to multiply, a (÷) sign means to add, a (-) sign means to divide, and a (x) sign means to subtract.

8 + 2 =
9 + 11 =
4 x 3 =
6 + 2 =
9 - 3 =
7 x 4 =
4 + 4 =
8 - 4 =
12 x 2 =
20 - 10 =
9 - 1 =
5 ÷ 6 =
2 x 1 =
10 - 5 =
12 + 2 =
3 ÷ 6 =
3 + 5 =
6 + 6 =

17 x 2 =
14 ÷ 7 =
6 x 5 =
8 + 3 =
7 x 2 =
9 + 2 =
8 - 4 =
9 + 6 =
1 ÷ 1 =
8 x 7 =
13 - 1 =
16 - 4 =
8 x 2 =
9 ÷ 9 =
6 x 2 =
8 + 4 =
10 - 2 =
4 - 1 =

18 - 3 =
8 ÷ 2 =
15 x 3 =
24 x 21 =
15 - 3 =
42 ÷ 50 =
38 + 2 =
16 + 3 =
14 ÷ 18 =
42 - 6 =
32 x 30 =
4 + 8 =
81 - 9 =
21 ÷ 9 =
12 x 10 =
64 - 8 =
6 ÷ 48 =
14 x 8 =

ANSWERS

1. Easy, is it not?

2. If you really know how to see in new ways your problem is solved:

3. If you reverse yourself, you have it made.

4. Jack be nimble
   Jack be quick
   Jack jump over
   The candlestick.

5. Too wise you are, too wise you be; I see you are too wise for me.

4.3.D.

GUESS WHAT THE MESSAGE IS

```
100000000000000000000000000000000000000
010000111000000000000010000000001000100
000000100010000000000000000000000000000
000000001001000010000001000000000000100
000000000100010000010001001001000010001
000100000001110000000000000010000000000
001000000000000000000000000000000000000
000000000000000000000000000000100000000
001001000001100010000000000000000000000
000000000000000000000001100011000011000
011000011000010000000001001001001001001
001001001001010101001001000011000011000
011000011000011000000000100000000000111
101000000000000000000000100000000000100
000100000000000101101100100000000000001
111101000000000000000000000000000010000
000000000000100010011100000000000010100
000000000000010100100001100101111001010
000000000000001010010000100000000001001
000000000000000010010000010000000000011
111000000000000011111000000111010100000
101010000000000010101000000010000000000
010001010000000001010001000000000000000
001000100100010001001101100111011011010
000010001001010101000100010000000000000
000001000100010010010001000100000100000
000000011100000111110000011100000001111
101000001010100000010000010001000000100
000000001000001000011100001000001000001
100000000100000100010001000100000100000
100001100001000001000100010010000010000
011000000001100000110110001101100000110
0111
```

The message above - all of the 000's and 111's - is an example of a message that might be received from another civilization in space. It is very difficult to figure out, as we don't have the faintest idea where to start. However, it can be figured out. The message came as electric pulses, or 1271 bits. There were two kinds of pulses, and that is why the 0 and 1 is used. Try to guess what they are trying to tell us. If you want the answer, send a self-addressed stamped envelope to the Instructional Fair, Box 6190, Grand Rapids, Michigan, and we will send you the decipher of the code. You might be interested in making up other messages similar to this that might be received from outer space.

From Guess What! The Instructional Fair, Grand Rapids, Michigan.

a - +
b - ⊓
c - X
d - ⊔
e - ⊗
f - △
g - ᗰ
h - ⊏
i - ∪
j - ∩
k - ⊐
l - ∨
m - ⫯

n - ⫰
o - ǂ
p - =
q - ‖
r - ⌉
s - ⊥
t - ∧
u - ⊸
v - ⟜
w - ⊖
x - —
y - Ƨ
z - |

ALPHABET SENSE CRYPTOGRAMS

The following cryptograms will test your alphabet sense. The problem is for you to find the alphabet key to the words and decode the messages. When you have succeeded in decoding the messages, you will have quotations which will give you some new food for thought.

1. Eht suoituac modles rre

Suicufnoc

___ _________ ______ ___

____

2. Hppe mvdl it b mbaz nbo't ftuinbuf pg
b xpslfs't tvddftt

Bopoznpvt

____ ____ __ _ ____ ___'_ ________ __
_ ______'_ _______

____

3. Wms ksqr immi glrm ncmnic yq ucji yq
yr rfck

Afcqrcpdgcib

___ ____ ____ ____ ______ __ ____ __
__ ____

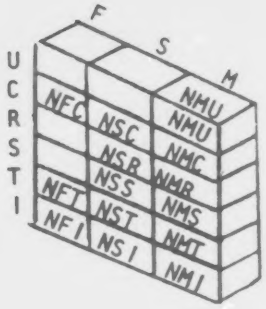
____

4. Abgi fzb pbmf pyyom weamf, ya lyq vgl
syf zgdb g kzgskb fy abgl fzbv gf grr

Fzyabgq

____ ___ ____ _____ _____, __ ___ ___
___ ____ _ ______ __ ____ ____ __ ___

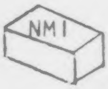
____



Concept Convergent Production

Curricular Objective

4.4 The student will be able to deduce meaningful information from given information



Input

Discuss how we use the information we receive to reach conclusions.

Discuss the steps the children take in reaching a conclusion.

Discuss the difficulties in jumping to conclusions.

Learning Opportunities

I. Distribute copies to each student of 4.4.A.
   A. Have each student mark items 1-10 based on their own conclusions.
   B. After marking them, have the students discuss their answers and what they are basing their conclusions on.

II. Divide the class into groups of 5-6 people.
   A. Distribute copies of 4.4.B.
   B. Have each group list all the facts they have. (You may help them with the answer grid.)
   C. Have them reach a conclusion.

III. Discuss how the conclusions were reached and then provide the answer.

DIRECTIONS:

The object of this puzzle is to discover the 9 letter word indicated by the nine blanks at the top of the paper. To do this you must first work each of the four clues listed below it.

Look at clue number 1. The four blanks indicate it is a four-letter word. In parenthesis is a definition of that word. What four-letter word can you think of that means "not early?"

"Late" is the right word. Write "late": one letter on each blank. Look directly below each blank at the number given. Below "L" is the number 8, write "L" on blank 8 of the mystery word at the top of your paper. Below "A" is the number 5. Write "A" on blank 5 of the mystery word, and so on. Work the remaining clues in the same way.

EXAMPLE:

____ ____ ____ ____ ____ ____ ____ ____ ____
1 2 3 4 5 6 7 8 9

1. ____ ____ ____ ____ (not early)
8 5 4 2

2. ____ ____ ____ ____ ____ (it runs on a track)
4 3 5 6 7

3. ____ ____ ____ ____ ____ (wooden shipping box)
1 3 5 4 2

4. ____ ____ ____ ____ (365 days)
9 2 5 3

NOW TRY MAKING UP YOUR OWN MYSTERY WORD AND CLUES.

CODES, CRYPTOGRAMS & CIPHERS

See if you can break these messages:

—••—• — ••• —, — ••• —•—

1. This cipher needs this phonetic alphabet to be broken:

a = ay
b = be
c = see
d = dee
e = ee
f = ef
g = jee
h = atech
i = aye
j = jay
k = kay
l = el
m = em
n = en
o = oh
p = pea
q = cue
r = or
s = es
t = tea
u = ewe
v = vee
w = dubleu
x = ex
y = why
z = zee

Eeayeswhy, ayees ayetea enohtea?

2. Look closely and you'll solve this one:

I fyo ure allykno who wtose einn eww aysyo urprob lemiss olv ed.

3. Don't go off in the wrong direction for this one:

Edam ti evah uoy, flesruoy esrever uoy fi.

4. This is a cryptogram - so code letters are substituted for the correct letters.

It is part of a famous rhyme. Clue: _v_ stands for _a_
_s_ stands for _i_

svpl at cnoah
svpl at xfnpl
svpl kfoy mbtu
ldt pvcrht qinpl

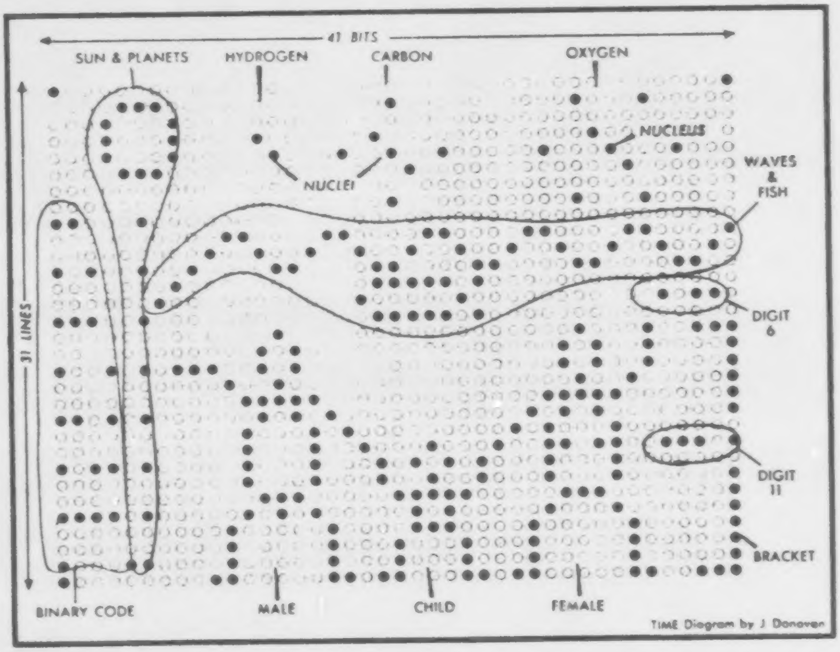
5. Try to de-cipher this:

Y Y U R Y Y U B I C U R Y Y 4 me.

4.3.E.

Hello, Earth, Do You Read Me?

HOW might the first intelligence from an extraterrestrial civilization be transmitted to earth? Basing his answer on a concept originally proposed in 1961 by Cornell Astronomer Frank Drake, Electrical Engineer Bernard Oliver composed a sample universal message that could conceivably have been sent from some distant planet. The information would be contained in a series of irregularly spaced pulses picked up by radio telescopes tuned to a wave length of 21 cm. (the natural frequency of radiation from a hydrogen atom and an obvious choice of an advanced civilization). Translated into print, the message would consist of an apparently meaningless sequence of 1,271 ones (for pulses) and zeros (for gaps between the pulses).



TIME Diagram by J. Donovan

After pondering the number 1,271, scientists of any technological society would soon recognize that it was the product of two prime numbers, 31 and 41. That would suggest that the ones and zeros might make sense if they were laid out either as 31 lines containing 41 digits each, or 41 lines of 31 digits. Breaking the message into 41 lines produces only a confusing clutter of zeros and ones, but in 31 lines (*shown above*), an organized pattern emerges. When that pattern is clarified by substituting dark spots for the ones and blank spaces for the zeros, it speaks volumes to scientific cryptographers.

The most obvious information is that the transmitting race consists of two-legged, two-armed creatures who exist as two different sexes and care for their young. The male figure is pointing to the fourth in a line of eight dots extending directly down from a sunlike circle in the upper left portion of the diagram. Thus it can be assumed that the intelligent race lives on the fourth planet circling the distant star.

The message also makes it evident that the transmitting race has learned spaceflight. How else would it know that there is water on the third planet (as shown by the waves extending from the third dot) with aquatic life flourishing beneath it? To the left of each of the planets are dots that can easily be identified as binary numbers. By assuming that the number opposite the first planet is one, the second planet two, and so on, scientists can spot the alien binary code. Giving their imaginations free rein, they can also recognize that the three groups of dots to the right of the star represent atomic diagrams: hydrogen (with one electron circling a central nucleus), carbon (six electrons and a nucleus) and oxygen (eight electrons and a nucleus). The atoms chosen suggest that life on the distant planet is based on a carbohydrate chemistry.

Using the binary number system represented by the dots opposite the planets, it can be concluded that the three dots above the female's raised arm represent the number six and probably indicate that the alien race has six-fingered hands. Finally, the bracket at the lower right seems to measure the height of the adults and is labeled at mid-point by the binary number eleven. Because the only length that the senders and receivers know in common is the 21-cm. wave length of the transmitted signal, it can be assumed that the adults are eleven of those wave lengths, or 7½ ft. tall.

Since Drake and Oliver developed their universal code in the early 1960s, the Russians have programmed computers to recognize such binary messages, convert them into two-dimensional arrays and then perform a statistical analysis of each resulting pattern to determine if it conveys enough information to be a message from an intelligent race. Their effort should pay off in the speedy deciphering of the first extraterrestrial message —if it ever comes.

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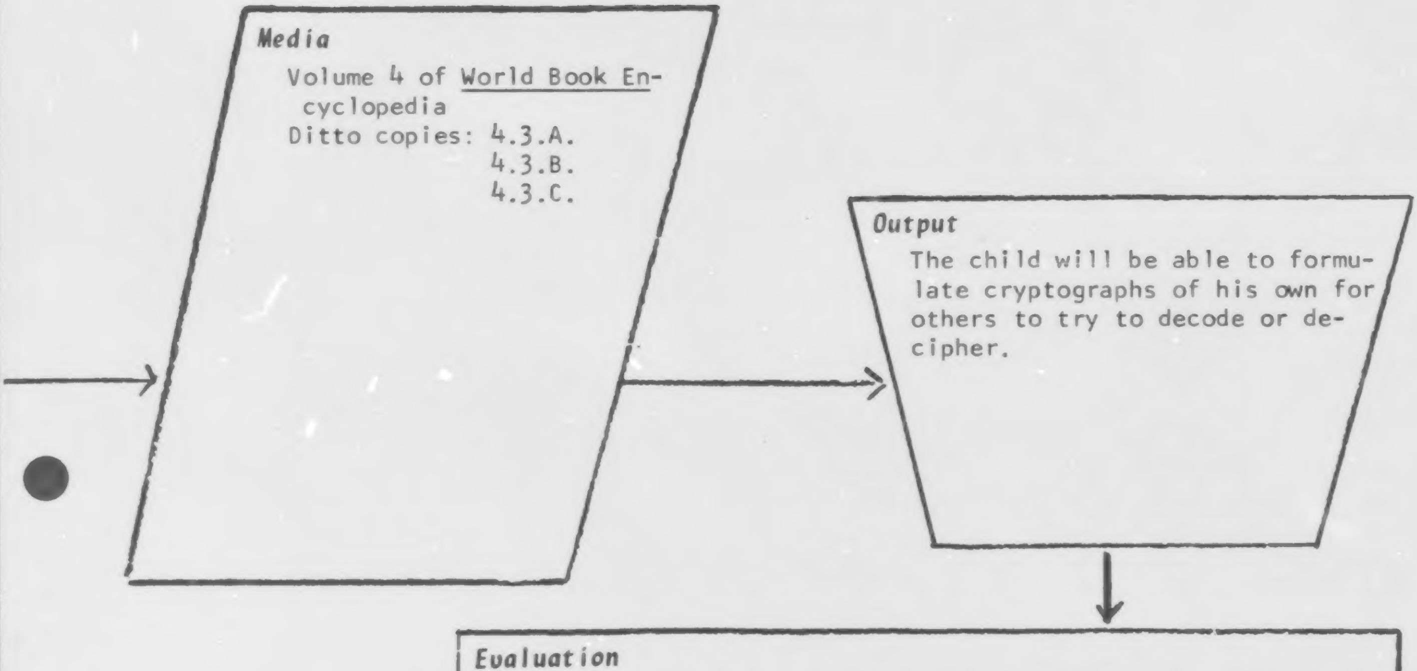


Media

Volume 4 of World Book Encyclopedia

Ditto copies: 4.3.A.
4.3.B.
4.3.C.

Output

The child will be able to formulate cryptographs of his own for others to try to decode or decipher.

Evaluation

The child will determine the difference between codes and ciphers by using cryptography.

Have the student formulate a cipher using the symbols provided on 4.3.F.
Distribute copies of 4.3.G.

Enrichment The children should try making cryptographs of their own. Copies of Herbert Zim's Codes & Secret Writing may be used. Research reports may be made by individual students. Students may try to decipher 4.3.D. (4.3.E. may help)

WHO IS THE ENGINEER? - ANSWER

1. Smith, Jones, and Robinson are the engineer, brakeman, and fireman on a train, but not necessarily in that order. Riding the train are three passengers with the same three surnames, to be identified in the following premises by a "Mr." before their names.
2. Mr. Robinson lives in Los Angeles.
3. The brakeman lives in Omaha.
4. Mr. Jones long ago forgot all the algebra he learned in high school.
5. The passenger whose name is the same as the brakeman's lives in Chicago.
6. The brakeman and one of the passengers, a distinguished mathematical physicist, attend the same church.
7. Smith beat the fireman at billiards.

WHO IS THE ENGINEER? _ SMITH

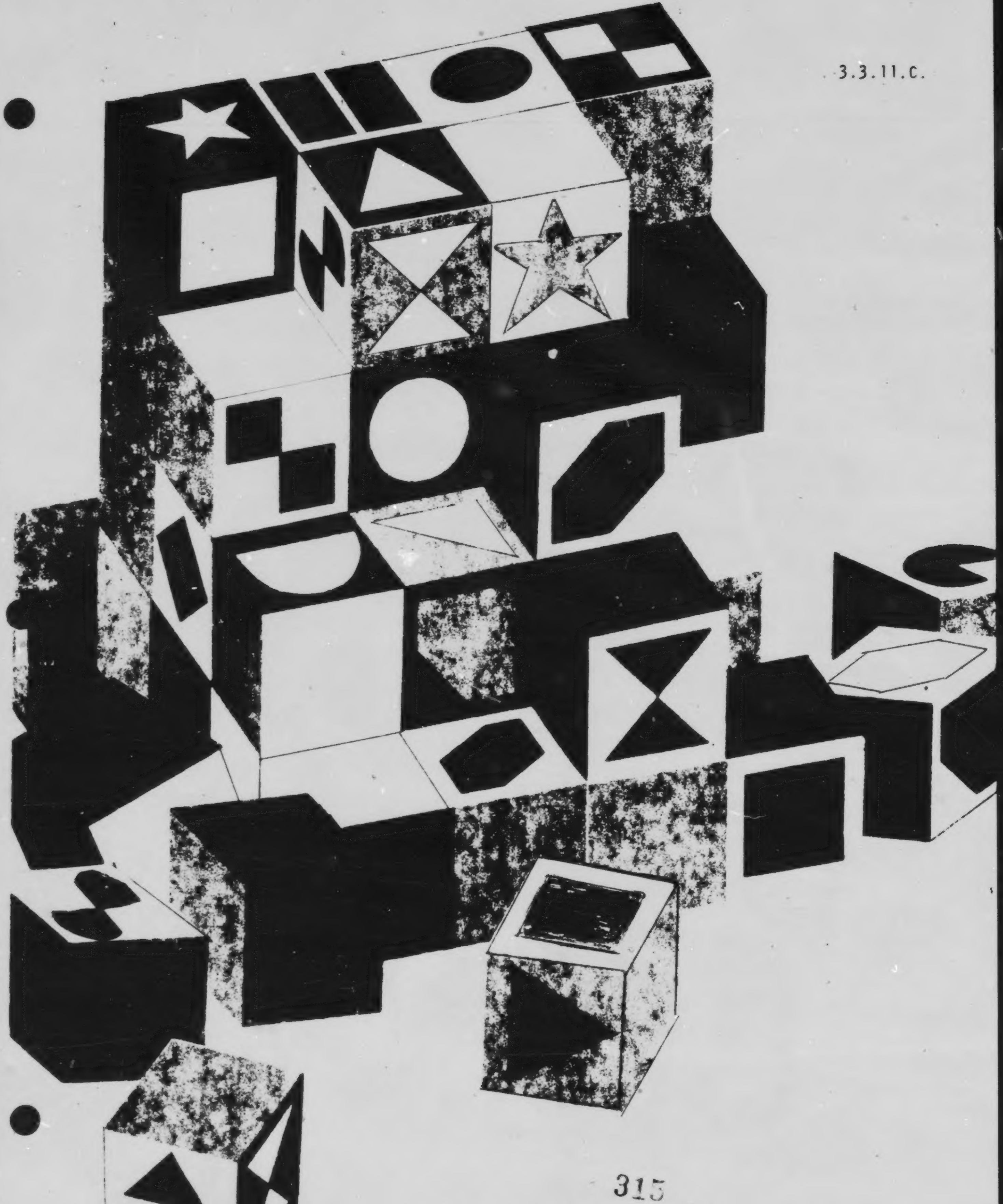
To Tally Facts

Engineer	Brakeman	Fireman
1	0	0
0	1	0
0	0	1

	L.A.	Omaha	Chicago
Mr. Smith	0	1	0
Mr. Jones	0	0	1
Mr. Robinson	1	0	0

From Mathematical Puzzles and Diversions, Martin Gardner. Simon & Schuster. New York, 1960.

3.3.11.C.



SITS ON WALL, HAS GREAT FALL

New York Man Dies at Baseball Game

A Bronx resident fell to his death in a freak accident at Shea Stadium yesterday, despite last-minute attempts by bystanders to save him.

Humpty Dumpty, 42, of, 10326-B York Avenue, was pronounced dead almost immediately after he had a great fall from the left -field wall at Shea. He had apparently climbed on the wall to get a better view of the game. Witnesses said he lost his balance as he leaned backwards to try to catch a tremendous home-run hit by Met shortstop Marvin ("Marvelous Marv") Throneberry.

Bystanders, including members of the mounted-police escort the city has provided for visiting King Veet Kong of Perdanales during his stay here, rushed to the victim's aid. But they were too late. All the king's horses and all the king's men couldn't put Humpty Dumpty together again.

Officials at St. Luke's Hospital, where the deceased was taken, said he died of a broken shell and multiple internal injuries, including a scrambled yoke. "Once he hit the ground, there was nothing we could do to save him," commented one hospital official.

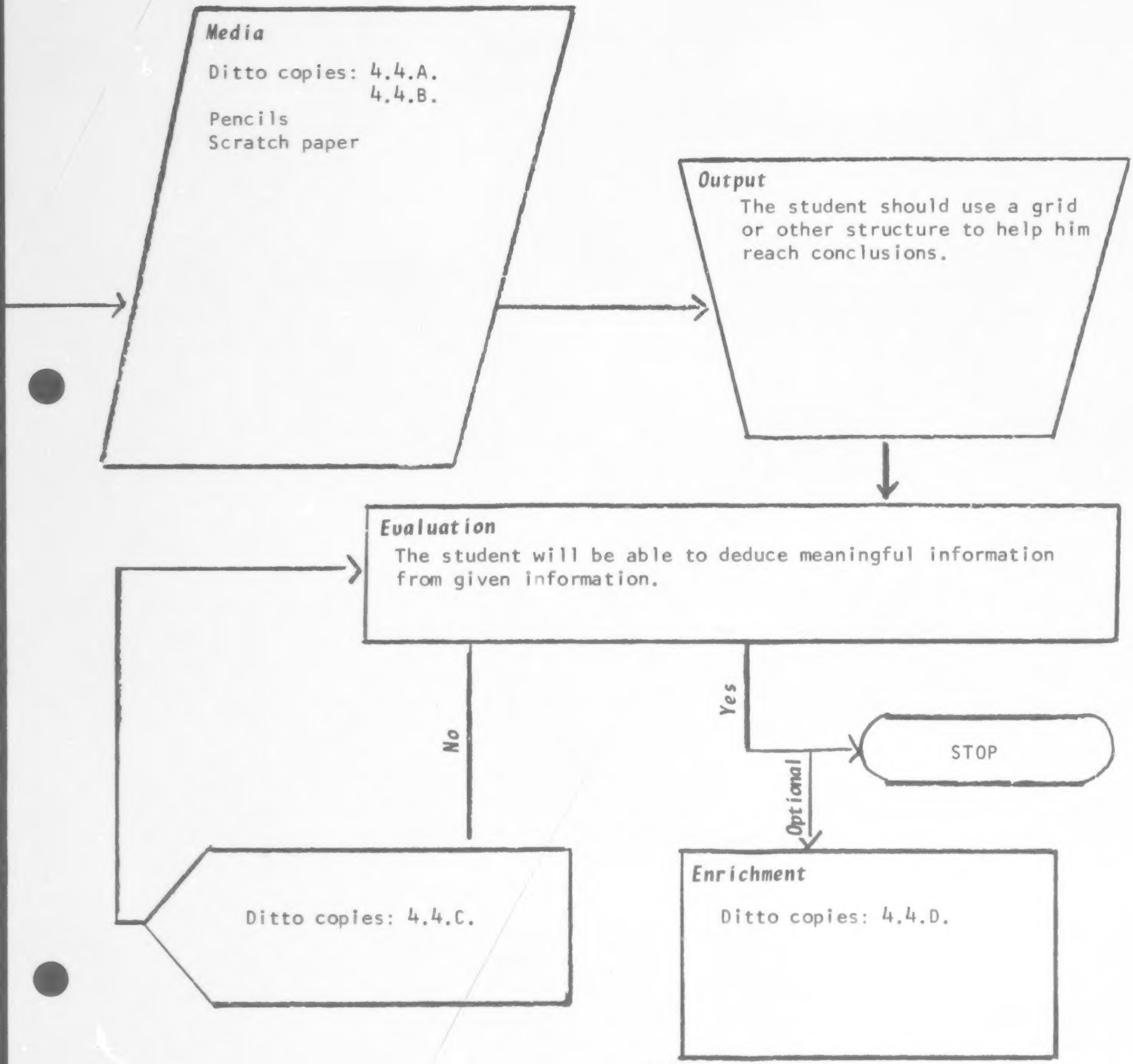
Doris Dumpty, wife of the deceased, told reporters today she planned to file a $12-million damage suit against the Met management, Throneberry, and all the king's horses and all the king's men for their part in her husband's death. "He didn't need all the king's horses and all the king's men," she explained. "What he needed was a doctor."

The management of the Mets has refused to comment.

In addition to his wife, Dumpty is survived by two sons, Hubert and Horatio, and one daughter, Muriel.

TRAGEDY AT SHEA—Photo taken shortly after the accident shows the approximate path of Mr. Dumpty's great fall.

World Wide Photos



Media

Ditto copies: 4.4.A.
4.4.B.
Pencils
Scratch paper

Output

The student should use a grid or other structure to help him reach conclusions.

Evaluation

The student will be able to deduce meaningful information from given information.

Ditto copies: 4.4.C.

Enrichment

Ditto copies: 4.4.D.

DOES IT MAKE SENSE?

A. Place an S to the left of the statements below which you believe to be sensible. Place a U to the left of those statements which you think are unreasonable. Make sure that you understand the terms of each proposition. If you have difficulty with any of the words, look them up in your dictionary.

_____ 1. If something is beautiful, it is also valuable.

_____ 2. An object either has color or it has no color.

_____ 3. Important discoveries in science are sometimes made accidentally.

_____ 4. A six-legged animal with wings may be an insect.

_____ 5. All in all, Jerry has two sisters and three brothers-in-law.

_____ 6. If Norman is a proficient reader, he is also a skilled mathematician.

_____ 7. Being a strict vegetarian, Ned prefers beef to lamb at mealtime.

_____ 8. The Jackson twins were seen riding to town by themselves, with Chuck in the middle.

_____ 9. The headlights of the oncoming car blinded the driver of the other car, causing him to run off the road.

_____ 10. If diamonds are more expensive than pearls, pearls cost more than rubies.

B. Why don't you try your hand at writing an exercise like this one? Just think of several sentences which are logical and some others which have an element of contradiction or implausibility. Mix them together, and then try to stump your friends. You can write your exercise in the space below.

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7. Smith beat the bireman at billiards.

WHO IS THE ENGINEER?

From Mathematical Puzzles and Diversions, Martin Gardner. Simon & Schuster. New York, 1960.

IT AIN'T NECESSARILY SO

The flagman who waves a lantern on a dark night at the railroad crossing is not doing his duty unless that lantern is lit. The same holds true of throwing a match into a kerosene soaked pile of paper - nothing will happen unless you light the match first. Here is a quiz to test your thinking. Don't jump to conclusions, but think of all possibilities. Of the statements below, some are always true and some are not. Can you distinguish which are and which are not? Score 10 for each correct answer. A perfect score is 90, average is 60. Take it easy before checking with the answer page.

1. Anyone who claims to foretell future events with positive certainty is a fake. YES NO

2. If you put your bare finger into a cup filled with coffee, your finger will get wet. YES NO

3. If your fingerprints are the same as those found on a glass, then you have touched that glass. YES NO

4. If I can see your eyes in the mirror, you can also see mine unless you're blind. YES NO

5. If you jump off the roof of the Empire State Building in New York City and you fall all the way, you'll be killed. YES NO

6. If you mix a good clear blue paint with a good clear yellow paint, the result will be green. YES NO

7. If an educated US citizen, living in the US for more than 21 years is not allowed to vote, he has been guilty of some crime. YES NO

8. It is a very unseasonable January day if the temperature outside is 90° in the shade. YES NO

9. Anyone born on February 29th can celebrate his true birthday every four years. YES NO

IT AIN'T NECESSARILY SO - ANSWER SHEET

1. NO. (Eclipse of sun and moon, and weatherman)

2. NO. (Instant Coffee)

3. YES

4. YES

5. NO (Only 6 floors) The observation platform is 6 levels below top.

6. YES

7. YES

8. NO (Not in Australia or South America)

9. 1900 not a leap year.

4.4.D.

WHO OWNS THE ZEBRA?

On a dirty street, stranger accosts stranger with a mimeographed sheet of paper and the question "Have you seen this?" In university dormitories, the problem is tacked to doors. In suburban households, the ring of the telephone is likely to herald a voice that asks, "Is it the Norwegian?"

The cause of the excitement is the brain-teaser below. The facts essential to solving the problem - which can indeed be solved by combining deduction, analysis, and sheer persistence - are as follows:

1. There are five houses, each of a different color and inhabited by men of different nationalities, with different pets, drinks, and cigarettes.
2. The Englishman lives in the red house.
3. The Spaniard owns the dog.
4. The Ukrainian drinks tea.
5. Coffee is drunk in the green house.
6. The green house is immediately to the right (your right) of the ivory house.
7. The Old Gold smoker owns snails.
8. Kools are smoked in the yellow house.
9. Milk is drunk in the middle house.
10. The Norwegian lives in the first house on the left.
11. The man who smokes Chesterfields lives in the house next to the man with the fox.
12. Kools are smoked in the house next to the house where the horse is kept.
13. The Lucky Strike smoker drinks orange juice.
14. The Japanese smokes Parliaments.
15. The Norwegian lives next to the blue house.

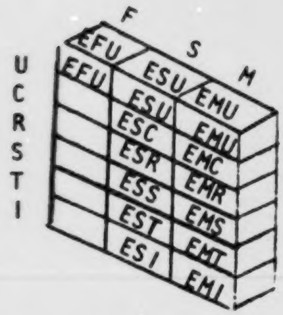
NOW, WHO DRINKS WATER: AND WHO OWNS THE ZEBRA?

* * *

BRAIN TWISTER: This one is being used by some personnel directors in oral aptitude tests for job applicants; you're supposed to answer in one and one-half minutes:

If a man-and-a-half can eat a pie-and-a-half in a minute-and-a-half, how many men would it take to eat 60 pies in 30 minutes?

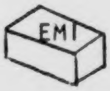
Published originally in Life International December 17, 1962 copyright Time, Inc.
Reprinted from Teasers and Tests, Reader's Digest. 1967



Concept Evaluation

Curricular Objective

5.1 Given a creative checklist each child will evaluate his own divergent thinking.



Input

Discuss the great divergent thinkers of the world such as DaVinci, Edison, Morse, etc.

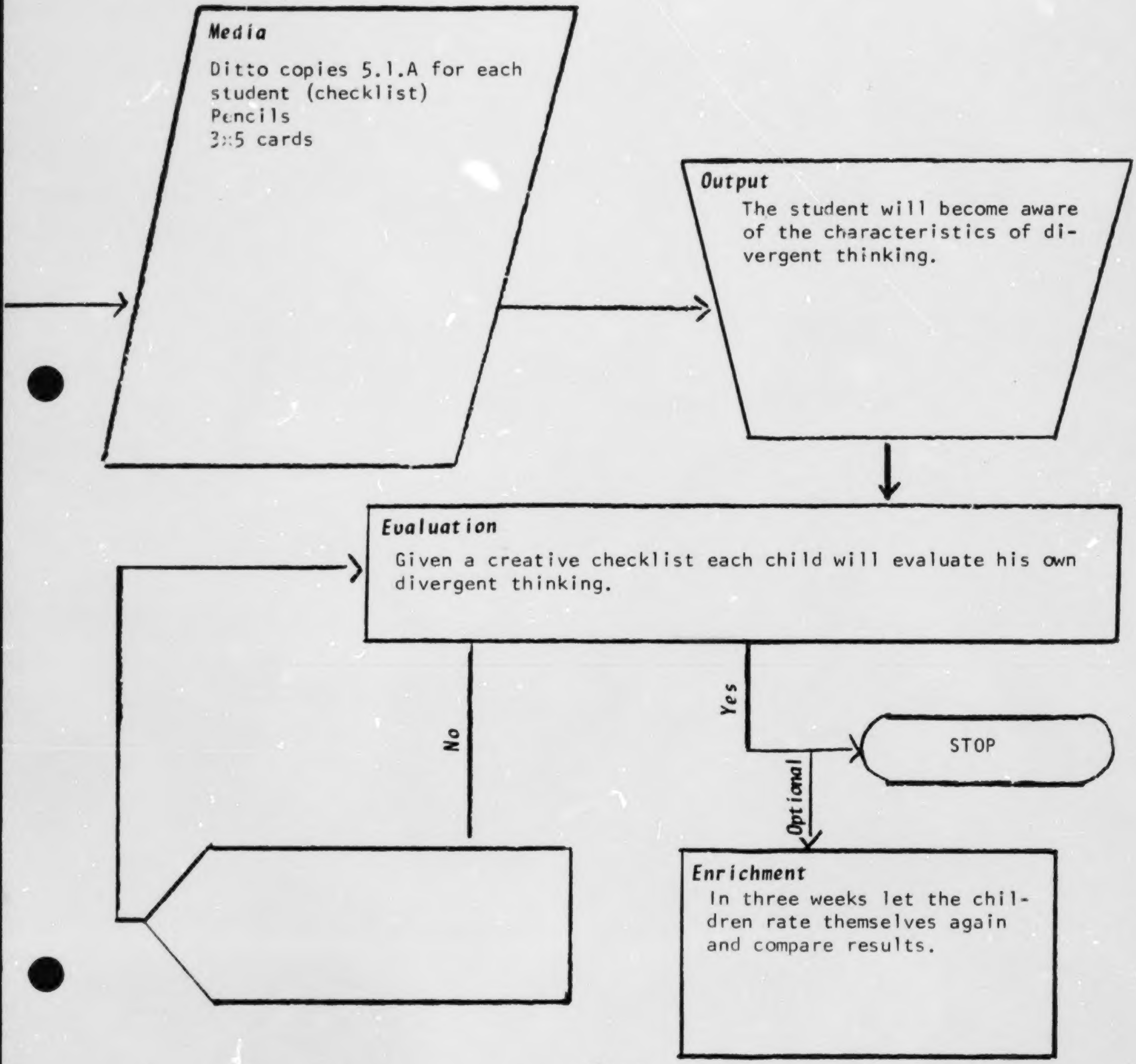
Obtain books or articles on these original thinkers.

Determine with the children what characteristics these people have in common.

Learning Opportunities

I. Give each child a checklist for The Creative Person (See: 5.1.A)
  A. Explain that these ten characteristics were typical of the great divergent thinkers.
  B. The child will rate how he compares to each characteristic as the teacher explains it.
  C. Emphasize that the characteristic has to be present in the child most of the time (at home, school, etc.) for him to mark it "have."

II. The child rates himself each week by folding the rating sheet so he cannot see his previous answers.
  A. After rating himself he unfolds the paper and compares the weeks.
  B. In the second week the child should brainstorm ways he can change his "have not" qualities into "have."
  C. Try to increase the number of "haves" by the fourth week.
  D. At the end of the fourth week the child should look at the pattern his rating sheet shows.
    1. He should analyze the chart according to those characteristics he has improved and those that have consistently been "have."
    2. Those characteristics that remain "have not" should be listed on a 3x5 card and attached to his desk.
    3. The child then works on these characteristics and crosses them off as he conquers them



Media

Ditto copies 5.1.A for each student (checklist)
Pencils
3x5 cards

Output

The student will become aware of the characteristics of divergent thinking.

Evaluation

Given a creative checklist each child will evaluate his own divergent thinking.

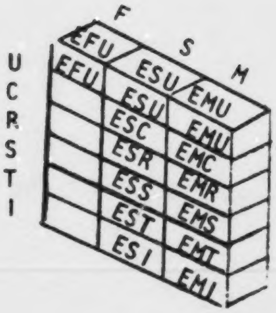
Enrichment

In three weeks let the children rate themselves again and compare results.

CHECKLIST FOR THE CREATIVE PERSON

After each item put the words "have" or "have not."

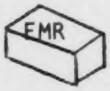
Elements of Creativity	First Week	Second Week	Third Week	Fourth Week
1. Desire - wanting to make things better, hoping to improve what is already good.				
2. Alertness - being alive, awake to notice everything that happens to you and around you.				
3. Interest - wanting to dig beneath the surface of what goes on.				
4. Curiosity - thinking of and asking questions on all sections of a problem or situation.				
5. Thoughtfulness - seeing all the parts of a problem and give considerate thought to understanding exactly what it is.				
6. Concentration - able to focus your interest and thought and keep it focused so that you can think about and understand things in depth.				
7. Application - putting forth the effort, using energy and hard work constantly.				
8. Patience - able to keep coming back to a problem time after time, until you're completely satisfied with the solution.				
9. Optimism - having self-confidence and enthusiasm.				
10. Co-operation - being willing to share your ideas with others and help develop them. Considering the reactions of others and their suggestions.				



Concept Evaluation

Curricular Objective

5.2 The student will observe and analyze the steps in the process of a group decision.



Input

Discuss how people arrive at decisions.

Contrast the impulsive, quick judgment with considering all the possible facts and alternatives before reaching a decision.

Learning Opportunities

I. Explain that the game the children are about to play will show them some examples of decision-making. (See: 5.2.A)

II. Distribute ditto copies of "Lost on the Moon" (See: 5.2.B)
   A. Each individual child ranks the items according to his own judgment.

III. Divide the class into two groups of 12-16 members each.
   A. Divide each of these groups into Group A and Group B consisting of 8 members (or less) each.
   B. Group A will meet for 10 minutes to try to reach consensus on the Summary Sheet (See: 5.2.C)
   C. Group B will observe their decision making by following six guidelines (See: 5.2.D)

IV. After 10 minutes stop and discuss what the observers noticed.

V. Reverse the groups and follow the same procedure for 10 minutes.
   A. Repeat this procedure until both groups have reached consensus.

VI. NASA's rating may be read and compared to the group and individual ratings. (See: 5.2.E)
   A. They may be scored according to the Consensus & Scoring Sheet. (See: 5.2.E)

ANSWER SHEET

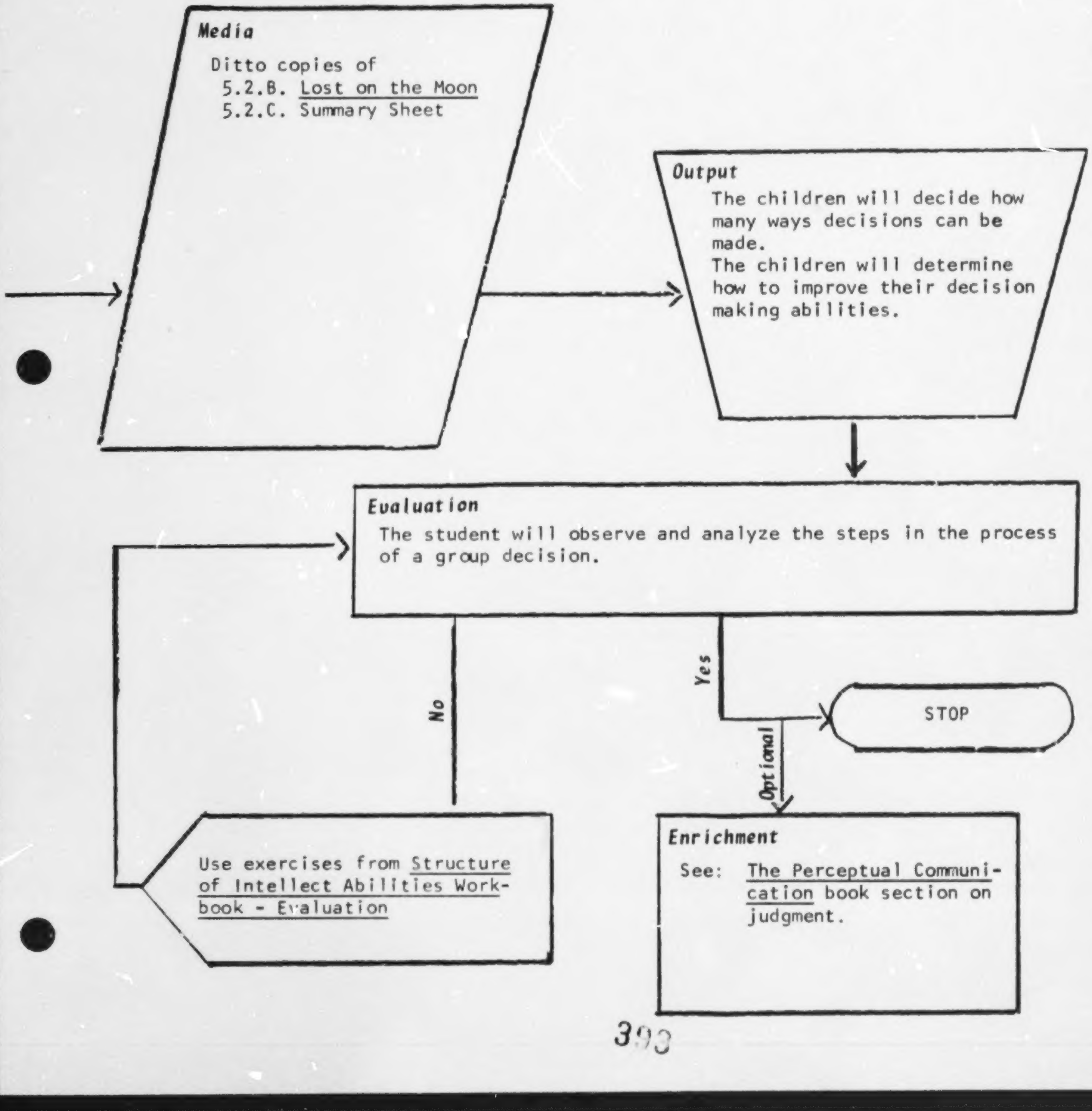
WHO OWNS THE ZEBRA?

The Norwegian drinks water. The Japanese owns the zebra.

HOUSES	Yellow	Blue	Red	Ivory	Green
INHABITANTS	Norwegian	Ukrainian	Englishman	Spaniard	Japanese
PETS	Fox	Horse	Snails	Dog	Zebra
BEVERAGES	Water	Tea	Milk	Orange Juice	Coffee
CIGARETTES	Kool	Chesterfield	Old Gold	Lucky Strike	Parliament

BRAIN TWISTER

If one and one half men can eat one and one half pies in one and one half minutes, twice as many men can eat twice as many pies in the same time. If three men can eat three pies in one and one half minutes, then one man can eat one pie in one and one half minutes. So in 30 minutes one man can eat 30 divided by one and one half, or 20 pies; and three men would be needed to eat 60 pies in 30 minutes.



Media

Ditto copies of
5.2.B. Lost on the Moon
5.2.C. Summary Sheet

Output

The children will decide how many ways decisions can be made.
The children will determine how to improve their decision making abilities.

Evaluation

The student will observe and analyze the steps in the process of a group decision.

Use exercises from Structure of Intellect Abilities Workbook - Evaluation

Enrichment

See: The Perceptual Communication book section on judgment.

DECISION-MAKING FISH BOWL

Rationale

This is an exercise in group decision-making. We often have difficulty coming to consensus in groups. Some people do not like to compromise and feel that their judgment is always best. Others change their minds rapidly and can never seem to decide among the alternatives. They are easily swayed by others.

The purpose of this exercise is to help you become aware of how you make decisions in a group setting.

Instructions

1. Your group is to divide into two groups, A and B. The groups should be of equal size.
2. Group A is to reach consensus on Activity 1, Lost on the Moon, while Group B observes the process. Consensus means that the prediction for each of the 15 survival items must be agreed upon by each group member before it becomes part of the group decision.
3. At the end of ten minutes, Group B is to stop A's activity, and share with them for five minutes their perceptions of the group's and individual's behavior in the decision-making process.
4. Then the groups are to reverse roles.
5. Repeat Steps 1 through 4 until both groups have reached consensus.
6. Check your answers against NASA's answers.

Criteria for Observing the Decision-Making Process

1. Consensus is difficult to reach. Therefore, not every ranking meets with everyone's complete approval. However, does the group try to make each ranking one with which all group members can at least partially agree?
2. Do individual group members avoid emotional involvement and arguing for their own judgments? Do they approach the task on the basis of logic rather than defending their own choices based on conceivable slim evidence?
3. Do some group members avoid conflict by giving in or changing their minds?
4. Do some group members support decisions which they do not really agree with?

LOST ON THE MOON

Instructions

You are in a space crew originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. Due to mechanical difficulties, however, your ship was forced to land at a spot 200 miles from the rendezvous point. During re-entry and landing, much of the equipment aboard was damaged, and since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200-mile trip. Below are listed the 15 items left available and undamaged after landing. Your task is to rank order them in terms of their importance in allowing your crew to reach the rendezvous point. Place the number 1 by the most important item, the number 2 by the second most important, and so on through number 15, the least important.

________ Box of matches

________ Food concentrate

________ 50 feet of nylon rope

________ Parachute silk

________ Portable heating unit

________ Two .45 calibre pistols

________ One case dehydrated Pet milk

________ Two 100 lb. tanks of oxygen

________ Stellar map (of the moon's constellation)

________ Life raft

________ Magnetic compass

________ 5 gallons of water

________ Signal flares

________ First aid kit containing injection needles

________ Solar-powered FM receiver-transmitter

SUMMARY SHEET
Consensus Game (NASA)

	1	2	3	4	5	6	7	8	9	Group Prediction	NASA
Box of matches											
Food concentrate											
50 feet of nylon rope											
Parachute silk											
Portable heating unit											
Two .45 calibre pistols											
One case dehydrated Pet Milk											
Two 100 lb. tanks of Oxygen											
Stellar map (of moon's Constellation											
Life raft											
Magnetic compass											
5 gallons of water											
Signal flares											
First aid kit containing Injection needles											
Receiver-transmitter Solar-powered FM											
SCORE											

Group Member's Names

1. ______________
2. ______________
3. ______________
4. ______________
5. ______________
6. ______________
7. ______________
8. ______________

5.2.D.

DECISION MAKING GUIDELINES

1. Does the group try to make each ranking one with which all group members can at least partially agree?

2. Do individual group members avoid emotional involvement and arguing for their own judgment?

3. Do some group members base their reasons on logic rather than defending their choices based on their own emotions or a small amount of evidence?

4. Do some group members support decisions with which they do not really agree?

5. Does the group reduce conflict by using majority voting, averaging, or trading to reach decisions?

6. Do the group members consider differences of opinions as helpful rather than as a hindrance in decision-making?

LOST ON THE MOON EXERCISE

Answers and Scoring

Answers:

Boxes of matches	15
Food concentrate	4
50 ft. nylon rope	6
Parachute silk	8
Portable heater unit	13
Two .45 calibre pistols	11
One case dehydr. milk	12
Two 100 lb. tanks oxygen	1
Stellar map (moon version)	3
Life raft	9
Magnetic compasses	14
Five gallons of water	2
Signal flares	10
First-aid kit w/needles	7
Solar-powered radio	5

Answers in order:

1	Two 100-lb. tanks of oxygen
2	Five gallons of water
3	Stellar map
4	Food concentrate
5	Solar-powered FM transceiver
6	Fifty feet of nylon rope
7	First-aid kit with inj. needles
8	Parachute silk
9	Life raft
10	Signal flares
11	Two .45 calibre pistols
12	One case dehydrated Pet Milk
13	Portable heating unit
14	Magnetic compass
15	Box of matches

Scoring

Subtract your ranking number for each item from NASA's ranking number. Add these differences. Also do this for the ranking list and compare individual prediction with the group prediction.

Example:	Your Ranking	NASA's	Difference
Box of matches	8	15	7
Signal flares	14	10	4

Explanation

These are the answers supplied by the NASA scientists. The answers are split into groups - physical survival and traveling to the rendezvous.

The first two items are air and water without which you cannot survive at all. After that comes the map for locating position and figuring out how to get to the rendezvous. Food comes next for strength on the trip. It is not as necessary for survival as air and water.

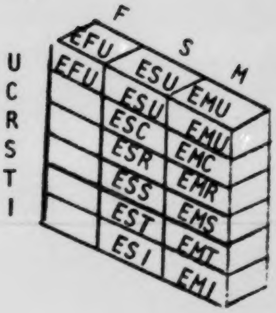
The FM transceiver is for keeping in touch with earth. In a vacuum, without an ionosphere, radio transmission travels only in line of sight and would be limited on the moon to destinations of approximately ten miles. On earth powerful receivers could pick up messages which would then be relayed to the mother ship. The next item would be rope for lunar mountain climbing and traversing crevasses on the trip. The next item would be first aid for injuries. Parachute silk would offer excellent protection from sunlight and heat buildup.

The life raft is a carryall for supplies, (the moon's gravity permits heavy loads to be carried) as a shelter, and a possible stretcher for the injured. It also offers protection from micro-meteorite showers.

Flares cannot burn in a vacuum but they, as well as the pistols, can be shot. Flares and guns would therefore be excellent propulsive devices for flying over obstructions. The milk is heavy and relatively less valuable.

On the moon overheating is a problem and not cold. Thus the heating unit is useless.

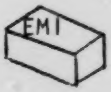
The magnetic compass is useless without a map of the moon's fields. The box of matches is obviously the most useless item.



Concept Evaluation

Curricular Objective

5.3 The child will be made aware of his order of values and how they relate to a group decision.



Input

Discuss what things are important to us.

1. Ask the children to name several things that are important to them.

Discuss why these things are important - what has happened to make them important.

Discuss how these "values" influence our decisions and behavior.

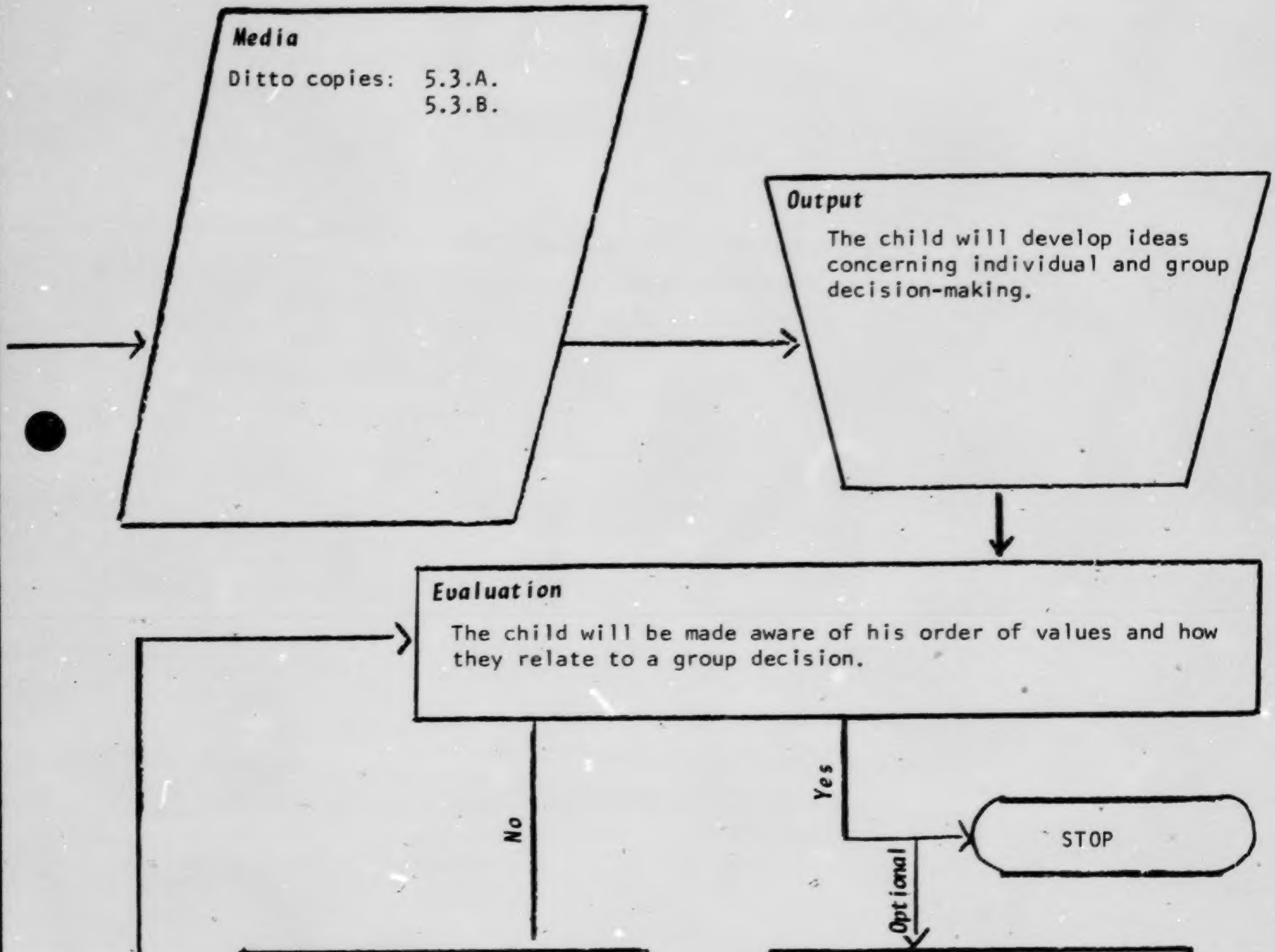
Learning Opportunities

I. Give each child a copy of 5.3.A.
    A. Explain that they should read through the whole list.
    B. Then they should look for the items that are important to them (whether they are for or against the idea is not what they are to consider.)
        1. It clarifies the idea to tell the children to select those items that they really have some feeling (positive or negative) about.

II. Give each child a copy of 5.3.B.
    A. Have each child rate his opinions only one per square.
    B. The strongest opinions should be put on the right-hand side and work left to the opinions that aren't considered as important.

III. After each child has rated his own opinions have the children arrange themselves in groups of no less than four and no more than six.
    A. Each group is to meet and decide by discussion (not vote) on the four most important items of the group's choice.
    B. Explain that the decisions on the most important items should be agreed upon by all the members of the group.
    C. Encourage each child to be allowed to have his arguments heard in order to give his opinion.

(over)



Media

Ditto copies: 5.3.A.
5.3.B.

Output

The child will develop ideas concerning individual and group decision-making.

Evaluation

The child will be made aware of his order of values and how they relate to a group decision.

Enrichment

Have the child keep track of the number of decisions he makes in a week - both as an individual and as a member of a group.

Learning Opportunities (continued)

IV. When each group has selected its choices have them report on the following:
  A. Could they get consensus from their group?
    1. If so, how did they get it?
    2. If not what were some of the difficulties?
  B. Did each group member have an opportunity to state the reasons for his opinions?
    1 How did the other members of the group react?
    2. Did this help or hinder the decision-making?
  C. Were members of your group willing to concede on some of their opinions?
    1. Did members of the group stick to their opinion just to win the argument?
  D. What are some of the problems of group decision-making? What are some of the benefits?
    1. How can we make group decision-making more effective?

TAKE YOUR ORDER

How strongly do you feel about:

1. A company that continues to pollute the environment after being fined?
2. Sports being the way to encourage good sportsmanship and fairness?
3. The person who wears unusual clothes?
4. Having a dress code at school?
5. A person who cheats on his income tax?
6. Eating lunch in the school cafeteria?
7. A person in a restaurant who blows cigarette smoke in your face while you are eating?
8. The person who copies someone else's paper?
9. A person who uses "fear" and lectures to influence the behavior of other people?
10. Watching television more than three hours a day?
11. Selecting your own dinner when you eat out?
12. The person who always talks about ecology and throws trash out of his car?
13. The young person who uses dangerous drugs?
14. The person who is most qualified for an office actually winning the election?
15. The rationing of gasoline?
16. The person who uses too much alcohol?

Rank these on your opinion check-list by putting one item in each square.

Meet with your group and agree upon the top four items.
Discuss why these items are the top four.

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Couldn't Care Less	Mild Opinion	Strong Opinion	Very Strong Opinion
13	9	5	1
14	10	6	2
15	11	7	3
16	12	8	4

Group:

5.3.B.

5. Does the group use "conflict-reducing" techniques such as majority vote, averaging, or trading to reach decisions?

6. Do the group members view differences of opinion as helpful rather than as a hindrance in decision-making?

Classroom Development

Break into groups of 12 to 16 members. Read instructions. Each group should not have more than 8 members, either making the decision or observing. Provide each member with a copy of "Lost on the Moon."
Length of exercise: 60 minutes.

Assessment

What did you learn about the way you make decisions?

What did you learn about the way groups make decisions?

What can you do to improve your decision-making ability?